

KontakTUM Magazine

For Alumni of the Technical University of Munich
Autumn/Winter 2020/2021

Digital

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within the TUM Family

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Dr. Sabrina Eisele and Dr. Verena Schmöller
from the KontakTUM editorial team

The Future is Now

Making roads safer, ensuring trains arrive on time, improving medical diagnoses, saving lives: a lot of what used to be utopian is now possible with the help of digital technology. It helps us to simplify everyday life and save time for other important things. By automating processes and improving production planning, we minimize environmental pollution and thus promote sustainability.

This issue of the Alumni Magazine is dedicated to the topic of [digitalization](#). For our round table on the topic, TUM President Thomas F. Hofmann has sat down with four female experts on digital technology from various industries. Together they discussed how we can actively shape digitalization and implement it in a socially responsible manner. We would also like to introduce you to twelve entrepreneurs from the TUM Family, whose ideas and products will shape the future.

In the second part of the magazine you will find, as usual, those TUM events to which we would like to extend a warm welcome to you as alumni. Once again, most of the events will be held online – this way participating from anywhere in the world is possible.

We look forward to exchanging ideas with you and wish you an inspiring read.



Revolution in the German University System

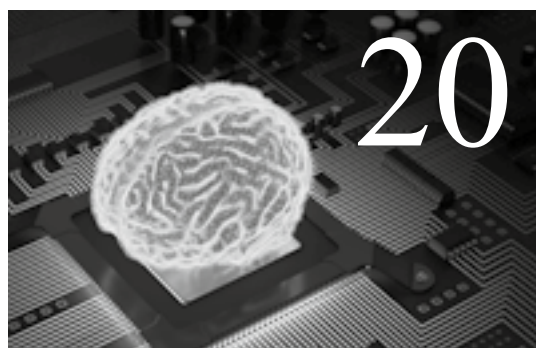
TUM has embarked on its planned structural reform: On October 1st, the Wissenschaftszentrum Weihenstephan für Ernährung, Landnutzung und Umwelt was transitioned into the TUM School of Life Sciences. It is the first of seven schools in the new organizational structure of TUM, which will promote innovation. “Breaking with the historically-grown faculty structure resembles a revolution in the German university system”, says President Thomas F. Hofmann. “Together, the TUM Family is embarking on an exciting path into the future.”

More on the structural reform at: www.exzellenz.tum.de/en/university-of-excellence

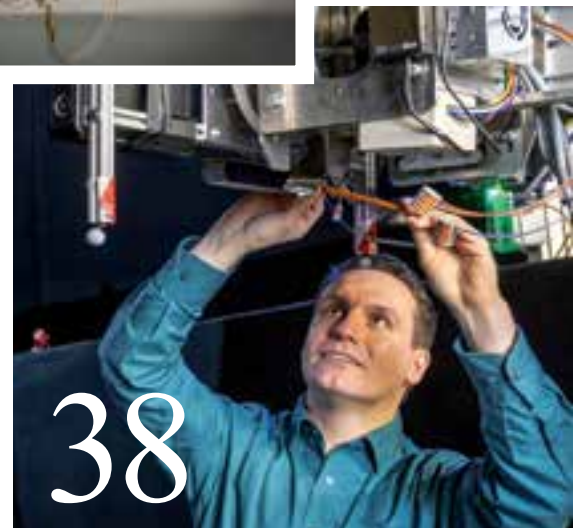
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ability is being researched,
learned and taught – tune in!

As many events had to be postponed or cancelled at short notice due to the corona pandemic, this KontakTUM issue does not provide the usual index of events and offers. Updated information can always be found [here](#):

Alumni & Career events and online services:
www.community.tum.de/veranstaltungen

TUM calendar of events:
www.tum.de/en/university-life/events

University operations at TUM during the pandemic:
www.tum.de/coronavirus



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In the TUM Family you can meet role models and pass on your own experience – get involved!

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online**

in English and German
www.community.tum.de/en/publications



FOUR FEMALE EXPERTS,
THE PRESIDENT, ONE TOPIC

KONTAKTUM MAGAZINE
ROUND TABLE



Digitalization Requires Courage



The digital age has arrived. The technological developments of recent years are sweeping and are changing the way people work, communicate, consume – in short, how they live. As one of Europe's leading technical universities, TUM is actively shaping this new digital world by conducting top-class research in the relevant areas. Both economy and society are profiting from these research achievements: the results can be used to achieve prosperity, quality of life and at the same time security and social compatibility. For the round table on digitalization, TUM President Thomas F. Hofmann was joined by four female innovators and stimulators who are tackling the challenges of the digital world on a daily ba-

sis. What they all have in common is that they are among the pioneers in digitalization in their respective fields and are not afraid to venture down uncomfortable paths to improve their industries. Together they discussed what they are personally enthusiastic about in digital technology, why each and every one of us should play an active role in shaping digitalization, and to what extent the corona crisis can be seen as a wake-up call for Germany in particular.

The day of the round table is a warm, sunny Wednesday in September. The female experts have been invited to TUM, we are meeting in the main building at Arcisstraße. It doesn't happen every day that such interdisciplinary expertise in digitalization is gathered in one place. Some of the guests have even cancelled important business appointments and traveled a long way. Dr. Elisabetta Castiglioni has flown in from London, where she lives. In times of corona, traveling has become more difficult, the Managing Director of digitalization service provider A1 Digital with headquarters in Vienna and Munich tells us.



*In the future,
everyone will need
digital skills to be
professionally
successful.*

Prof. Dr. Thomas F. Hofmann

Welcome to Munich, Dr. Castiglioni. We are very pleased that you could make it.

Dr. Elisabetta Castiglioni: With pleasure. After all, we have an important topic to discuss today. Digitalization concerns all of us, although perhaps in different ways.

Dr. Pamela Herget Wehlitz, for many years Chief Information Officer of the German engine manufacturer MTU Aero Engines, and developer Laura Lammel, Managing Director of the family-owned company of the same name and Vice President of Landesverband Bayerischer Bauinnungen [Bavarian Regional Association of Construction Guilds], join the group at the same time.

Laura Lammel: It's so nice to be back at TUM. It's been a while since I studied (laughs). I more frequently come to the Munich University of Applied Sciences, for example when I give presentations on digitalization in the construction industry.

Dr. Pamela Herget-Wehlitz: I read that this is a difficult field: digital technology in the construction industry.

Lammel: To be honest, sometimes I am envious of companies like MTU with a "standing production". With every order we are confronted with a new situation:

every structure is different, every construction site is different. We find good siloed solutions, but it is hardly possible to optimize the overall process in such a way that allows us to use only one single digital solution for a large part of the work.

President Thomas F. Hofmann enters the room and cordially welcomes the women present.

Prof. Dr. Thomas F. Hofmann: How nice to have you all here at TUM today and that you are taking the time to talk to us. I know that each of you has a full schedule – myself included (laughs). That makes us all the more grateful.

President Hofmann, we have just been talking about the major challenges that digitalization is creating for the construction industry.

Hofmann: Indeed, we have experienced this here at the university as well. At the Department of Civil, Geo and Environmental Engineering we had a massive drop in students about five to ten years ago. As a result, we modernized the degree programs with topics such as digital construction and other specializations. As a result, student numbers are now shooting up again. Following Informatics, Mathematics and Economics, this is the department with the fastest growing student numbers. By the way, offering relevant content in line with the latest trends is the way to attract the best talent to the university. After all, that is our mission as a university: to groom experts for the future.

Lammel: That is definitely very important, however, my experience is that practical experience often throws a

wrench into the works. I was lucky to experience the New Economy and the huge hype at Stanford. That was when I understood what digitalization meant and how it was used in the USA at that time. With these ideas I came back to Germany. Unfortunately, there had been a construction crisis here since the end of the 1990s, we had to lay off employees and all I was able to do digitally was a switch from MS Dos to Microsoft. When I started to work with associations in 2012 and the topic of digitalization was discussed there, I raised my hand and said: “I know something about that.”

How did you proceed with the implementation?

Lammel: I listen carefully to what experts from other industries or start-ups tell me, adapt projects and tools for the construction industry and then try to implement them stringently. At the same time I advise medium-sized companies on their way into the digital age. But even today, many companies in the construction sector still don't have a website or email address. On top of that, construction workers are often not trained to use digital tools. And vice versa, some contractors now send each other construction plans only via WhatsApp and then find it surprising that they are full of errors.

Dr. Herget-Wehlitz, you joined the engine industry as an engineer in 1985 right after finishing your studies. What role did digitalization play for you back then?

Herget-Wehlitz: In the engine industry, digitalization indeed was an issue at a very early stage. As a young engineer, I started out in the aerodynamics department, where a lot of programming had to be done. Our department was a big one, and we developed the computing processes ourselves because something like that didn't exist on the market yet. We had the first supercomputers – that was really great and fancy. But of course no PCs and no text programs or anything like that. That only started in the late eighties. It was a lot of “learning on the job”: we developed new products and that required the new digital tools, which we subsequently developed. That was always a back and forth process. Digitalization is not a project with a beginning and an end, it is an ongoing process.

What do you mean?

Herget-Wehlitz: As technologies are constantly evolving, you have to constantly question your own approach and the use of the tools. For example, the topic really took off in the 1990s when the Internet and email began to take hold. As a result, programs for collaboration became more important. Twice in my career, I have introduced



LAURA LAMMEL

Laura Lammel is Managing Director of the Munich-based family business Lammel Bau GmbH & Co. KG and Vice President of the Landesverband Bayerischer Bauinnungen [Bavarian Regional Association of Construction Guilds]. Laura Lammel was born into the construction industry. The family business was founded by her grandfather in 1948 and taken over and successfully continued by her father – also a TUM Alumni (Diploma Civil Engineering 1970) – in the late seventies. In 1993, she enrolled in Civil Engineering at TUM and in 1998 she wrote her diploma thesis at Stanford University in California. In 2000 she assumed the management of the medium-sized family business, which specializes in reinforced concrete and industrial construction. For this purpose, the civil engineer has added a course to become an expert on concrete in 2012. In recent years, Laura Lammel has made a name for herself as a speaker and consultant in the construction industry, in particular in supporting small and medium-sized enterprises in their digital transformation. Furthermore, she represents the construction industry on the board of the Zentralverband Deutsches Baugewerbe as well as on the board of the Vereinigung der Bayerischen Wirtschaft e.V. In July 2020, Laura Lammel became the first woman to be elected as Head of the Munich Building Guild [Obermeisterin der Münchner Bauinnung].



I brought back a lot of ideas for digitalization from the USA and started to implement them at home in Germany.

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We always have to consider carefully whether a tool is suitable for the task, otherwise we get too diversified.

MARIA SIEVERT

Maria Sievert completed her studies in Arkansas and at TUM with a Bachelor of Science in Civil Engineering and a Master of Science in Industrial Engineering and Management. Together with her husband Dominik, she developed the world's first automation system for incoming tissue samples in laboratories. In 2017, they established the Munich-based start-up Inveox, which has set itself the goal of using digital solutions to improve the transport of tissue samples from doctor to laboratory, as well as information processing related to digital samples. The Inveox system comprises a coded container for transport, a software platform and an automated entry point in the laboratory. The company thus is the only one on the market to cover this step in the process chain.

Meanwhile, Inveox has raised a total of 22 million euros from investors in three rounds and is cooperating with Roche Diagnostics Germany to further advance digitalization in pathology, increase the safety and reliability of laboratory diagnostic findings and make workflows more efficient. Edition F has listed Maria Sievert as one of 25 women whose inventions will change our lives.

a product data management system, which means that you have to deal with quite a few divisions of the company at the same time and makes you realize how connected things are. It makes you think really hard about what you're doing because you can relatively quickly screw up the company with something like that. Misguided digitalization can be quite dangerous.

Castiglioni: The development of digital technologies over the past twenty years has been a challenge for many industries and companies, and I think many people still show great respect for such technologies. Successful digitalization requires strategy, resilience and courage. It forces us to focus on what is relevant and important, even if that means doing something that is far outside our comfort zone.

How did the companies deal with that?

Castiglioni: Any big change is initially painful. However, in order to survive in the long term and develop as a company, it is worth making the necessary cuts. It is better to courageously face the challenges of the time in order to recognize changes early enough and to be able to implement them actively and strategically. If you jump on the bandwagon too late, you may no longer be able to navigate yourself, but you will be navigated. One result of this development is that IT today is no longer a pure service provider, but has become a kind of catalyst and part of the corporate DNA. This applies to all industries.

TUM Alumna Maria Sievert is the fourth member of the group: Together with her fellow student and now husband Dominik, the young business IT specialist set up a start-up in 2017 which aims at using digital solutions to improve the transport of tissue samples from doctor to laboratory, as well as to advance information processing related to digital samples.

Ms Sievert, as the youngest in this group, you are one of the so-called digital natives. Is everything in your start-up fully digitized?

Maria Sievert: Indeed, we did start with a very young team. This means that there is an enormous amount of openness to digital products. The opposite of what you are describing happens: everyone has a new suggestion as to which digital tool we could also use. We then have to carefully consider whether the tool is suitable for the task at hand. We need to make sure we don't get too diversified.

Herget-Wehlitz: I believe this is important. You have to approach things from the perspective of the problem and the processes and not from the program or digital tool that is available. That's where a lot of people take a wrong turn and put the cart before the horse. A digital

solution really has to fit the problem, otherwise it just creates more complexity. And if you do it right, you can even bring on board people who may not be digital natives.

Sievert: We are currently standardizing the project management tool in all teams. This requires a lot of discipline from all participants until you reach the point at which the benefits of the system actually come through. Sometimes, however, we deliberately wait longer before introducing new tools until the team is almost crying out for help itself and says that it can't get anywhere with Post-its and pens anymore (laughs). Then we say: "We might have something to help". That way the team can be won over a little faster.

Lammel: Digitalization also has to be properly communicated. Without direct human-to-human communication, we will not succeed in changing processes and streamlining procedures through digitized structures and artificial intelligence. To do that we need time, empathy, courage and persuasiveness.

President Hofmann, how important is computer science in the education of students

Hofmann: Computer science really should be a core subject in every degree program. The traditional canon of Natural Sciences consisting of Mathematics, Physics and Chemistry has to be expanded by Computer Science as a fourth pillar. Even a physician needs to have a basic understanding of it: they don't have to be a software developer, no no, but they have to be trained to be able to speak and communicate with a computer scientist. It's all about basic "digital skills", which everyone will need in the future to remain professionally successful.

Castiglioni: Many of our customers are from the SME sector and frequently ask me if they need to hire a data scientist now. And if so, where they would even find one (laughs). We try to reassure our customers and tell them



to focus on their core competencies and not to worry. Of course, a basic understanding and courage to tackle the digital transformation is essential. The right partner will support you in the rest.

How can this be conveyed to employees who have graduated a while ago and who are not digital natives?

Hofmann: As a university, we see it as our duty to offer further training for alumni and executives. Recently, we have established the TUM Institute for Life Long Learning, which offers professional and executive education. Training is provided through a clever combination of in-class and digital learning, so that employees don't have to leave the company for too long and can integrate training into their day-to-day work.

Would you say that Germany has missed the boat on digitalization?

Hofmann: I wouldn't go that far. We did have some innovative ideas, but we did not sufficiently scale up and explore promising areas of application. Looking at the construction industry, this can be demonstrated very well. As we have already heard, actual digitalization is not yet a reality here. At the same time, construction used to be a sector in which we Germans were able to really score points. Meanwhile, we have lost a significant lead. We have rested too long on the fact that we have traditionally been strong in the manufacturing sectors and have shown too little courage to rethink and redirect.

What do you mean by that?

Hofmann: I remember a report from four or five years ago: Our current Minister for Economic Affairs met the Head of Google at Stanford. The minister boasted that Germany is making the best cars. And the Head of Google replied

dryly: "Yes, that's true. But that's why we are buying your engineers." At the end of the day, fortunately, it didn't quite come to that. But who would have thought back then that Tesla would one day set up a plant in Germany as large as the one in Brandenburg. The world is moving incredibly fast and is not waiting for Germany. We have to keep at it and that's what we'll do. We have a lot of know-how and very well educated people in the country. They have to be convinced to stay here.

Sievert: We have found that the motivation for a cause is a decisive factor for young professionals to decide for or against a profession, a company or a country. After all, in our start-up there are many computer scientists and engineers from TUM. They found it exciting not to go into the automotive industry, but to use their know-how in medical engineering and for a good cause. Our task is to improve cancer diagnostics. Everyone can relate to that because everyone has someone in their circle of friends or family who is affected by the disease.

Hofmann: This is something we also notice with the students. They are looking for tasks that are both exciting and important. I wanted to study Chemistry back then because I was interested in laboratory work – that's what I was passionate about. But today you no longer hear something like that from any student. They say: "I want to achieve something, I want to make a difference, I want to have a purpose." That's what drives them. You have to meet the students where they are and offer them good-quality, innovative programs.

Herget-Wehlitz: Speaking from the perspective of a large company, I have to say that it is of course not always easy to take all employees with you on the road to digitalization. What we have done is that two years ago we recruited a number of young people with an affinity for digital technology for the relevant departments: with a good, digital education and three to five years of work experience. We placed them in the respective units with the task of taking a look at the processes there, thinking ahead and bringing the other people in there along. This ensures that even those who have fallen behind a bit have a chance to catch up and get back on the job. The model worked extremely well: the combination of experienced specialists and young, motivated people who always wanted a little bit more really was fantastic.

Hofmann: That's indeed the difficulty of a transformation, no matter if it is digital or any other kind. First you have to spread sufficient motivation, otherwise nothing will happen. A stagnant system will not move on its own. Sometimes the greatest danger is to believe that things will always continue as before.

Lammel: We have just witnessed that with the coronavirus.





DR. ELISABETTA CASTIGLIONI

Elisabetta Castiglioni has been Managing Director and CEO of the Telekom Austria Group subsidiary A1 Digital since 2017.

From 1984 to 1990 she studied Business Administration at Ludwig Maximilian University in Munich. In 1993 she received her doctorate summa cum laude from TUM, where she remained as a research assistant to TUM Professor Horst Wildemann until 1994. After completing her doctorate, she joined Siemens and, as CEO of Siemens Global Media Business, was part of the Siemens IT Solutions and Services Division. Under her leadership, a globally successful business unit with leading media and entertainment companies as customers was created. At MCI – now Verizon Business – she was EMEA Product Marketing Director for the launch of innovative data solutions for the corporate market and was responsible for network expansion projects in Europe and Asia-Pacific. Elisabetta Castiglioni has been a member of the Supervisory Board of A1 Telekom Austria AG since August 2017. She is also a member of the Supervisory Board of LEONI AG and a member of the Board of Directors of Euskaltel S.A.

We need a basic understanding of and courage to tackle the digital transformation.



DR. PAMELA HERGET-WEHLITZ

Until June 2020, Pamela Herget-Wehlitz held the position of Chief Information Officer at MTU Aero Engines AG, Germany's leading engine manufacturer. In this role, she was responsible for the global IT strategy, as well as digitalization at all locations worldwide.

With her studies in Aerospace Engineering at TU Berlin, she laid the foundation for her professional career and later earned her doctorate in Systems Engineering at TUM while working part-time. From 1985 to 1990 she was already working at MTU in the fields of Aerodynamics and Engine Testing. In 1990, Pamela Herget-Wehlitz joined BMW AG, where she held various executive positions in Vehicle Development and In-house Consulting. She also assumed the overall project leadership for the introduction of a product data management system in the Electrics/Electronics unit. In 2001, she returned to MTU Aero Engines AG, where she spent several years as Head of Engine Design before assuming global responsibility for the Quality unit from 2008 to 2015. Since July 2020, she has been Managing Partner of Personalberatung Herget and is actively involved in industrial associations.



I hope that society will manage to take advantage of the bright side of digitalization.

Dr. Pamela Herget-Wehlitz

Hofmann: Health implications aside, the corona crisis has been a real wake-up call, which has brought to light where TUM was lagging behind. Of course, we already had digital contents in teaching and are glad about that now. Nevertheless, the corona crisis has brought about a quantum leap at TUM. We had four weeks to convert the entire 2020 summer semester to digital content for our 42,000 students, who of course are entitled to continue with their studies, and whom we now need – more than ever before – out there as qualified professionals. This was an enormous community effort: every lecturer, the entire academic staff, the administration and the students themselves pitched in. We recruited 500 student e-scouts who helped the lecturers to edit films and really make the digitization of the formats a reality. TUM is known for advancing relatively quickly, but without the crisis we would not have been able to implement such a comprehensive, scaled transition for the next three years. That is something we will benefit from in the future.

As the experts sitting here, what are your wishes and visions for the further development of digitalization?

Sievert: As entrepreneurs, we all somehow have this curiosity and hunger to improve things. For me, digitalization is not an end in itself – digitalization just because that's what people do – no, but because I want to use it to achieve something. As a tool to make things better. In our case: a chance to avoid false diagnoses of cancer in the future.

Lammel: With regard to digitalization, it is important to take the entire society on board with us. People of all ages, with different educational backgrounds and nationalities. Digital technologies should be available to everyone, and at the same time it should be clear that it is still nice to be able to read a book.

Herget-Wehlitz: Like any technology, digitalization can be seen in both positive and negative ways. We have

to get a grip on certain things, such as cybersecurity or this massive dependence on a few software manufacturers. This is where I would like to see politics come to the rescue. I would be thrilled if society as a whole would succeed in ensuring that we can use the bright side of digitalization and keep the negative aspects in check.

Castiglioni: More initiatives to boost digitalization in and for Europe! One such initiative is GAIA, the European Cloud, which stores and processes data in accordance with European data security standards. We have to gradually free ourselves from our dependence on the United States and China.

Hofmann: A very, very important topic: Europe's sovereignty in digital technologies. To achieve that, we need a pan-European push. Together with a project group, we have just drafted a paper on a so-called "European Public Sphere", a digital ecosystem that follows European values such as privacy, openness and diversity. In addition, I would like to see a stronger alliance between academia and business – especially when it comes to digitalization. As a university, we are sometimes criticized when we collaborate with the industry. What they say is that academia is selling out. That really is nonsense. We don't let anyone dictate what to do research on. We have our standards. However, talking to experts like you today, it is relatively clear how essential it is to work closely together, both in terms of education and research, which we use to create technological innovations. Why is Stanford, for example, so successful?



Because Silicon Valley has created an ecosystem where science, business, start-ups and established global players all spur each other on. They exchange ideas, new things are created and directly implemented. This spiral of innovation is what I would like to see here in Germany, too.

Thank you very much for the interesting conversation.

The lively discussion has set a lot in motion. After the discussion, the participants continue to stand together, exchange business cards, arrange further meetings and collaborations in the near future. Everyone agrees that they want to continue to support the development of digital technologies and digital sovereignty in a European context. It is not too late for that – on the contrary: it is only just beginning.

PROF. DR. THOMAS F. HOFMANN

Thomas F. Hofmann has been President of the Technical University of Munich since October 2019. The food chemist studied Food Chemistry at Friedrich-Alexander Universität Erlangen-Nürnberg and received his doctorate in 1995 from the TUM Chair of Food Chemistry under Professor Peter Schieberle. In 1998 he completed his habilitation at the same department. Until 2002, he taught as a private lecturer in Food Chemistry at TUM and was also Assistant Director of the German Research Center for Food Chemistry. From 2002 to 2006, he was Professor and Managing Director of the Institute for Food Chemistry at Münster University, before being called back to TUM by President Emeritus Wolfgang A. Herrmann. From 2007 he held the Chair of Food Chemistry and Molecular Sensory Science at TUM at the Wissenschaftszentrum Weihenstephan. There he also headed the Bioanalytics unit of ZIEL – Institute for Food & Health until 2014. From 2009 to 2019, Thomas F. Hofmann was Senior Vice President for Research and Innovation at TUM. A project group with Thomas F. Hofmann and Jan-Hendrik Passoth from TUM's Munich Center for Technology in Society proposes in an impulse paper of the National Academy of Science and Engineering to establish a digital ecosystem that adheres to European values like privacy, openness and diversity.





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We need a strong alliance between academia and business – especially when it comes to digitalization. This is where we need to keep the conversation going.

THIS IS HOW **TUM** PROMOTES DIGITALI- ZATION

Quantum technology, ethics in artificial intelligence and fraud-resistant digital certificates: At a glance this section introduces you to the future-oriented projects in the field of digitalization TUM is working on.

Digitalization in Research

TUM's mission is to use research to enable innovations at the cutting edge of technology that sustainably improve the quality of life in society. Digital technologies in particular play a central role here. Via print and on-line publications, lectures and workshops, TUM keeps its alumni up to date on current research developments and digital innovations. This provides TUM Alumni with the crucial know-how they need to make trailblazing decisions for their own projects and in their own industries.



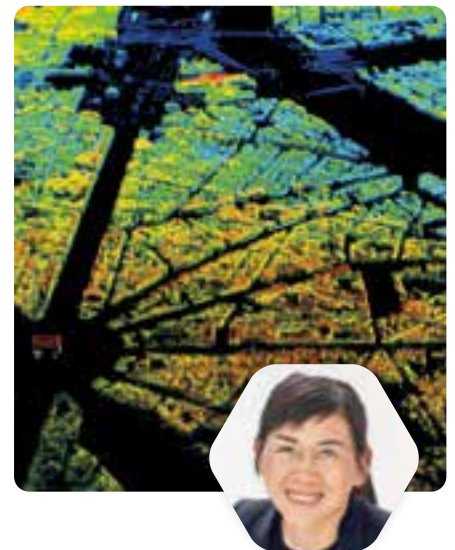
EXAMPLE 1
Preserving Health

Artificial respiration can save lives. At the same time, however, positive pressure ventilation is also an extreme strain on the lung tissue. This can have fatal consequences, especially if the lung is damaged. A digital model of the lung, developed at the **Institute for Computational Mechanics by TUM Professor Wolfgang Wall**, allows for a more gentle form of respiration and could thus significantly increase the chances of survival. Many years of research with increasingly refined simulation models for the behavior of tissue and airflow as well as micro-mechanical experiments on real tissue samples have resulted in this digital lung model.



EXAMPLE 2
Avoiding Accidents

In order for autonomous vehicles to participate in road traffic, it has to be ensured that they do not put others at risk. The team around **Matthias Althoff, Professor for Cyber-Physical Systems at TUM's Faculty of Informatics**, has developed a software that prevents accidents by calculating different versions of a traffic situation every millisecond. The software module permanently analyzes and forecasts what will happen while driving: The vehicle's sensor data is recorded and evaluated every millisecond. For each road user, the software calculates all possible movements – at least to the extent that these are in accordance with the road traffic regulations; in this way, the system is able to predict the future for three to six seconds.



EXAMPLE 3
Preventing Disasters

The world's major cities are growing. This growth places high demands on the safety of buildings and infrastructure, because damages may put human lives at risk. **Xiaoxiang Zhu, Professor of Signal Processing in the Department of Aerospace and Geodesy at TUM**, and her team have developed a method to detect potential hazards at an earlier stage: for example, subterranean subsidence can result in the collapse of buildings, bridges, tunnels or dams. The new method makes it possible to detect and visualize changes as small as one millimeter per year. The data for the detailed images of the cities is coming from TerraSAR-X, the most accurate civilian surveillance radar satellite in the world.

New Centers for Digitalization

Digitalization requires an interdisciplinary approach. In order to combat the coronavirus, for example, virologists are working together with mathematicians and business IT specialists to develop apps for contact tracing. Since interdisciplinary research has long been firmly embedded at TUM, for example through integrative research centers such as the Munich Center for Technology in Society, it is precisely here that the interfaces of subjects can be addressed and it is especially those that are important for digitalization.



EXAMPLE 1

TUM Institute for Ethics in AI

The TUM Institute for Ethics in Artificial Intelligence (IEAI) focuses on the ethical implications of Artificial Intelligence. Here, research talent from Medicine, Natural Sciences and Engineering co-operate with the Social Sciences and Ethics in interdisciplinary teams. "As a technical university, we can only make a positive contribution to social progress if we gear our technological innovations towards the values, needs and expectations of the people", President Thomas F. Hofmann says. The guiding principle of a human-centered engineering approach permeates TUM's agenda for research, innovation and student education. The IEAI will be giving an insight into its work at the pre-view in November, see p. 40.



EXAMPLE 2

Munich Data Science Institute

The Munich Data Science Institute (MDSI) is being established at TUM as an Integrative Research Center, responsible for research, teaching and promotion of young researchers in the field of Data Science and Machine Learning in particular, as well as for service tasks for TUM related to data science. On the one hand the MDSI's objectives are to research the fundamentals of modern data science with a special focus on machine learning. On the other, the MDSI conducts inter- and transdisciplinary basic research in domain-specific data analysis and machine learning in Engineering, Natural Sciences, Life Sciences, Social Sciences, Economics and Medicine. Furthermore, MDSI provides data-related services and consulting in the field of Data Sciences for researchers at TUM.



EXAMPLE 3

TUM Center for Digital Public Services

Administrations in Germany operate far less digitally than those in most other EU countries. The fact that, according to a report by the EU Commission, German citizens are rarely able to deal with necessary administrative matters via the Internet creates an urgent need for action, which has become apparent not least during the coronavirus pandemic. TUM has therefore set up a unique research center for the digitalization of public administration. The TUM Center for Digital Public Services will work out the legal foundations and specific legal, as well as technical/organizational possibilities for the modernization of public administration and, in cooperation with the Hochschule für Politik located at TUM, will act as a think tank for legislation.

SHARING RESEARCH DATA MORE EFFECTIVELY

The German federal and state governments intend to make research data more accessible. The target: to establish a national infrastructure for research data. Nine consortia have now been selected to develop such structures for various research areas. TUM is contributing its expertise in the field of Data Science through its involvement in three consortia. These are concerned with data from the Engineering Sciences, Catalysis and Genome Research.

QUANTUM TECHNOLOGY IN GARCHING

Quantum Sciences have long since found their way into our everyday lives. All modern microelectronics would be impossible without the basic principles of Quantum Physics developed by researchers like Max Planck and Albert Einstein. MRI scanners are already utilizing the knowledge of a new generation of quantum phenomena in a targeted manner to obtain sharper images, and in the near future quantum computers are expected to revolutionize data processing.

In recent years, Campus Garching has developed a research focus on Quantum Technologies that has attracted worldwide attention. In cooperation with other research institutions, TUM was also successful with the cluster of excellence "Munich Center for Quantum Science and Technology" in the funding program of the Excellence Strategy. It aims at gaining a comprehensive understanding of the phenomena of quantum mechanics and thus advancing basic components, materials and concepts for quantum technologies. TUM in Garching is home to the new research building "Quantum Science & Technology", whose 40 million euro funding is shared by the Federal Government and the Free State of Bavaria and which is being built at the moment.

FIRST AI-HUMBOLDT-PROFESSORSHIP

Prof. Daniel Rückert, an internationally renowned expert on the use of Artificial Intelligence in the medical field, has been awarded one of the first two Alexander von Humboldt Professorships for Artificial Intelligence. The computer scientist researches how Artificial Intelligence can improve imaging procedures in medicine. He recently transferred from Imperial College London to TUM. In his research here, Daniel Rückert will be reinforcing the bridge between Computer Science and Medicine. Daniel Rückert is the seventh Humboldt Professor at TUM, which makes it the undisputed champion in the competition for this prestigious award.



NEW HEIGHTS FOR AI-RESEARCH AT TUM

As part of Bavaria's High-Tech Agenda, TUM's leading expertise in the cutting-edge fields of Robotics and Artificial Intelligence (AI) will be significantly expanded. With a total of 14 new professorships, two of them integrated in Bavarian research networks spanning several locations, the research and innovation power of TUM in the fields of AI and Machine Intelligence is to be brought to world-class level.

AI and intelligent robotics in medicine, bioinspired robotics for mobile use, AI for new materials and processors and resource-saving machine learning are examples of TUM's strategic appointment policies. With these professorships, TUM strives to promote the rapid development of responsible and reliable AI.



UNDERSTANDING DIGITALIZATION HOLISTICALLY

TUM was quick to realize that digitalization is not only the conversion from analog to digital information. It is a holistic transformation process, similar to the one the world has already experienced in the preceding centuries when the mechanical loom was invented or during the industrialization.

This is accompanied by a variety of productivity boosts, changes in working methods, techniques, role models and much more. In order to play a decisive role in shaping this process, TUM is relying on interdisciplinary approaches in research and teaching, is implementing topics of digitalization in all departments and is itself investing in the digitization of the entire university.

Digitalization of Higher Education

Even TUM itself as a university is facing up to the challenges of digitalization: the leitmotif of a “digital university” has successively been implemented since 2002, based on the principle that efficient and reliable information and communication infrastructures are cornerstones of top-level research, teaching and administration.



EXAMPLE 1

TUM is Working on Fraud-Proof Digital Transcripts

In a joint project with top international universities such as MIT, Harvard and UC Berkeley, TUM is working on the development of fraud-proof transcripts using block chain technology. A worldwide standard for a trustworthy infrastructure for the exchange of digital certificates and academic records is being developed. User-oriented and cost-efficient information technology is also essential for today's organization of studies. Here, TUM is not interested in further siloed solutions, but in resilient and sustainable systems that meet international standards.



EXAMPLE 2

Campus Management System TUMonline

Ten years ago, TUM introduced the Campus Management System TUMonline, which was recently honored as an example of good practice by the Expert Commission for Research and Innovation of the Federal Government. The university's strong growth, the doubling of its student numbers in the last 15 years, would not have been manageable without the corresponding technical support. The TUMonline platform allows students, lecturers and administrative staff to view and manage all processes from application to graduation in one central location. In 2010, TUM was even awarded the “Bavarian eGovernment Lion” by the Bavarian State Government for its electronic application, admission and enrollment process.



EXAMPLE 3

TUM's IT-Strategy

TUM is working on a user-focused and seamless infrastructure for information and communication, which will facilitate the improvement of services in research and teaching while optimizing costs. The digital transformation involves all areas of the university, from human resources, finance and student administration to eLearning, digital library and learning platforms. Laptop loaning services for students, campus software licenses, a variety of electronic media and a globally available personal storage space of 400 GB are also part of the offer, which is continuously being improved in cooperation with the Information Officers of the departments and the students. Since 2012 the project TUMnet has been implemented, which enables TUM Alumni to access and update their data and to connect with the TUM Network online.

TUM ADDS INFORMATICS TO CAMPUS HEILBRONN

The Heilbronn campus of TUM is becoming a beacon for shaping digital transformation: The Dieter Schwarz Foundation is now financing eleven professorships in Informatics at TUM, which, together with the professorships in Economics, sponsored since 2018, conduct research and teach at the interface between Management and Technology. The focus will be on Information Engineering – a crucial component of digital transformation in companies.

“With the new professorships, we are creating a program in Heilbronn at the highest academic level, combining the fields of Informatics and Economics in a way that is unparalleled in Germany”, says TUM President Prof. Thomas F. Hofmann. “In this way, we are making an important contribution to shaping the digital transformation, and are providing a powerful impulse to secure jobs and prosperity in our country in times of the coronavirus pandemic.”

Digitalization in Teaching

TUM is providing education to tomorrow's specialists and executives, business people and entrepreneurs, who will help determine which digital technologies will prevail in the future. For this reason, digitalization is a cornerstone not only of research, but also of teaching at TUM. Teaching itself is also moving with the times and is becoming increasingly digital.



EXAMPLE 1

The Future of Digital Studies has Arrived

During the coronavirus pandemic, TUM has at short notice massively expanded its digital teaching. Within a very short time, over 30,000 instructional videos were produced. Video conferences with several hundred participants were held, amounting to 1.8 million attendees in total. In an evaluation three weeks after the lectures began, 71 percent of the students stated that they were satisfied or very satisfied with the transition to digital teaching. TUM Partners of Excellence and private individuals will continue to support TUM with extensive funding to accelerate the further development of digital formats for teaching and examination.



EXAMPLE 2

Digitalization as Content of Every Degree Program

One of TUM's central claims is to integrate the study of digital aspects and applications into every degree program in order to prepare students for the working world in the best possible way. For example, as part of their Mechanical Engineering studies, students look into the requirements of additive manufacturing. At the TUM School of Education, future educators are trained in the digitization of vocational training. The TUM School of Governance offers courses on law in a digital society and the TUM Management and Technology program offers students a specialization in digital technologies.



EXAMPLE 3

Further Training on Digitalization

The current changes to our working and professional environment are more dynamic than ever before and continue to create new challenges for experts and managers. Coping with these challenges requires the willingness and opportunities for lifelong learning. As a forward-looking university, TUM has therefore established the TUM Institute for Life Long Learning. TUM Alumni can take advantage of numerous opportunities for further training here, especially in the field of digitalization. The Center for Digital Leadership Development, for example, provides future-oriented management training based on digital technologies.

SHAPING EUROPE'S DIGITAL SOVEREIGNTY

A digital ecosystem committed to European values, relying on democratic control and facilitating digital sovereignty: A project group with a strong presence from TUM has presented a concept for such a “European Public Sphere” in a discussion paper.

A digital ecosystem committed to European values, relying on democratic control and facilitating digital sovereignty: A project group with a strong presence from TUM has presented a concept for such a “European Public Sphere” in a discussion paper.

The corona crisis has demonstrated the usefulness of digital platforms. They enable us to remain in virtual contact while physically distancing, whether in digital classrooms, the working world or in private life. However, the crisis has also shone a light on Europe's dependencies in the digital world. The leading digital platforms are provided by non-European companies. The same applies to the most powerful data infrastructures. Europe and its citizens have little input on the nature and structure of the digital public sphere and

thus few opportunities to shape an infrastructure that plays a central role in social life, political consensus, individual freedom and the private sphere, and economic competitiveness.

A project group, which includes TUM President Thomas F. Hofmann and Jan-Hendrik Passoth of TUM's Munich Center for Technology in Society (MCTS), advocates the creation of a digital ecosystem committed to European values such as privacy, openness and diversity. The group's discussion paper “European Public Sphere – Shaping Europe's Digital Sovereignty” describes the path to such a digital space, where a diverse range of products and platforms can emerge, offering fair and transparent conditions for access and use.

Find out more at go.tum.de/110291

“The current crisis, in which we are all working even more digitally than before, plainly brings to light Europe's failures of the past ten years. Civil society, science and the economy can no longer relinquish control over their data and make themselves dependent on closed, non-transparent systems. I am firmly convinced that both providers and users long for trustworthy, participatory alternatives.”

Thomas F. Hofmann
TUM President



BEACON FOR THE FUTURE

In the field of AI research, TUM is one of the best universities in the world. The wide range of expertise of nearly 60 professors who are currently conducting research on Machine Learning and AI at TUM has been interdisciplinarily integrated and geared towards forward-looking fields of innovation by establishing the Munich School of Robotics and Machine Intelligence (2017), the TUM Institute for Ethics in Artificial Intelligence (2019) and the Munich Data Science Institute (2020), which is currently being set up.

*“We can build
a creative
ecosystem of
great value.”*

Thomas F. Hofmann
TUM President

VIABLE FOR THE

**How do
entrepreneurs help
shape the digital
world? Ten
TUM Alumni
share their
visions.**

FUTURE

JAN GOETZ

IS BUILDING QUANTUM COMPUTERS

TUM Alumni Dr. Jan Goetz (Diploma Physics 2011, Doctorate 2017) did his doctorate on superconducting quantum processors at the TUM Chair of Technical Physics. Today he is the founder of IQM and runs one of the few European companies in the field of quantum technology. At the two locations in Helsinki and Munich, he is producing hardware for quantum computers, e.g. special processors, and meanwhile has a workforce of over 60 employees.

Quantum computers are still a product of the future. "Experts predict that the first commercially usable machines will be available in five to ten years. The



technology can, however, already be commercialized in the fields of education and research", says Jan Goetz. The high-performance computers are being hailed as one of the key technologies of the 21st century and will be capable of solving complex computing tasks in just a few hours that would previously have taken several years. This will help, for example,

to accelerate the search for active ingredients in the pharmaceutical industry or to optimize traffic systems in real time. In 2020, the German Government decided to subsidize quantum technologies with 2 billion euros and commissioned the construction of at least two quantum computers.



TUM Alumni and Celonis-founder Bastian Nominacher (left) and Martin Klenk during a visit at TUM.

BASTIAN NOMINACHER IS IMPROVING COMPANIES THROUGH DATA

Bastian Nominacher (Master Finance and Information Management 2011), Martin Klenk (Bachelor Informatics 2011) and Alexander Rinke (Bachelor Mathematics 2010) came by their company **Celonis** more or less by chance: During their studies at TUM, the three founders were involved in a student consultancy. As part of one of their projects, they wanted to improve customer service for Bayerischer Rundfunk [Bavarian Broadcasting]. However, with traditional methods, this was not very efficient. In the course of this project, the founders noticed something that laid the foundation for their current company. "The IT system automatically stored process data – an incredibly valuable resource that was constantly growing", Bastian Nominacher says.

Based on a publication by Dutch professor Wil van der Aalst, the three young men developed their

own program. Nowadays, more than a third of DAX companies use this technology. As a result, Celonis is considered the world market leader in so-called process mining. It allows companies to analyze all digital business processes and thus quickly identify whether there are any problems in the processes and where they are located. "We have created a completely new category of technology in this area", Bastian Nominacher explains. "This is what makes our work so incredibly exciting and thrilling." Today, the alumni is Co-CEO and co-founder of one of the world's most successful start-ups, with over 1000 employees, headquarters in Munich and New York and over 15 offices worldwide. In November 2019, investors rated the TUM spin-off at 2.5 billion US dollars.

Continue reading at
www.150.alumni.tum.de/en/celonis-en

FELIX GERLACH

IS INVENTING AN ONLINE PASSPORT

Felix Gerlach (Bachelor Management & Technology 2015, Master 2018) and Mathias Klenk (Bachelor Management & Technology 2015, Master 2017) met as students at TUM. Today, they manage one of the most ambitious start-ups in the field of Data Protection with offices in Berlin and New York. Their company **Passbase** addresses a problem that many Internet-based companies are facing: How can abuse through identity fraud be prevented?

Passbase acts as an intermediary between customer and website, automates the verification process and regulates the exchange of personal data. Passbase is designed to be used like a passport or identity card on the Internet. Once verified, it can be used to log in to other services. The grand vision of the two founders: to use Passbase to return data control to the Internet users – in the long term, they hope to completely eliminate passwords on the Internet. While Passbase provides the platform and stores the data in encrypted form on the servers itself, customers are able to delete everything irretrievably at the push of a button and thus remain in control.



LACHANA HADA

IS TEACHING GIRLS IN NEPAL HOW TO PROGRAM

Lachana Hada (Bachelor Electrical Engineering and Computer Science 2011, Master Informatics 2014) loves Computer Science. As a student she programed for the Intel Corporation and the German Aerospace Center. Today, the TUM Alumna develops groundbreaking cloud-based software for heart surgery in the TUM spin-off Laralab.

It is not always easy for the native Nepali in the rather male-dominated field of Computer Science, even in Germany. "If someone thinks I'm not good at my job because of my gender, then this is just another opportunity for me to prove them wrong", she says. Compared to this, the situation for women in her home country Nepal is much worse. Stereotypical clichés about gender roles keep girls from pursuing a career in technical fields. The lack of role models makes it even more difficult to break away from stereotypes. In Nepal, the cost of education is a very heavy financial burden for poor families. If girls are sent to school at all, they are lucky. In the year of her Master's degree Lachana Hada decided to change this and started the **Impactors Initiative**. In multi-day workshops, the self-confident software engineer provides schoolgirls and students with insights into the many different areas of application of Computer Science. Together they are building robots and trying to work out, among other things, how Artificial Intelligence could solve the traffic problem in Kathmandu or how different animals could be distinguished and categorized using biometric methods.

Continue reading at
www.150.alumni.tum.de/en/lachana-hada-en

FELIX HAAS

IS A PIONEER
OF THE DIGITAL
START-UP
INDUSTRY
IN GERMANY



TUM ENTREPRENEUR
OF EXCELLENCE

As a founder, investor and innovator, TUM Alumni Felix Haas (Diploma Electrical and Computer Engineering 2006) is almost unstoppable. Since 1997 he has set up five successful companies in the Internet industry, including Amiando, Europe's leading service for event ticketing. Felix Haas is also an investor and board member in numerous Internet companies, and he is a member of the German Government's Advisory Board "Young Digital Economy". Furthermore, he has been awarded the title "Technology Pioneer" by the World Economic Forum.

Through his mother, Professor of Medicine at the Klinikum rechts der Isar, Felix Haas has had contact with TUM early on. After graduating from high school, the passionate computer scientist decided to study Electrical and Computer Engineering. While still a student, he laid the foundation for SiROP, a TUM network for students, researchers and universities. With START Munich, he started a student initiative of TUM,

which brings together Munich's most promising prospective entrepreneurs. As part of his studies, he spent a year in Silicon Valley working at a number of places, including the BMW Technology Office Palo Alto and on projects in cooperation with Google and Stanford University. Continue reading at

www.150.alumni.tum.de/en/felix-haas-en

CATHARINA VAN DELDEN

IS CREATING
ECOSYSTEMS
FOR INNOVATION



TUM Alumna Catharina van Delden (MBA Innovation and Business Creation 2010) developed the drive to implement her own business ideas by starting her own company while she was still a student. Together with three fellow students, she developed methods and strategies for the best possible integration of customers into the innovation processes of companies. The objective was to channel the needs and requirements of customers in such a way that



ANGELIKA KNEIDL IS IMPROVING THE SAFETY OF PUBLIC SPACES

The way people move at events, where pedestrians flock on squares and in buildings is the subject of TUM Alumna Dr. Angelika Kneidl's (Diploma Informatics 2005, Doctorate 2013) and her team's analysis and simulations. In 2014 she launched the company **accu:rate** with TUM Alumni Florian Sesser (Diploma Informatics 2011).

The motivation to start a business came when Angelika Kneidl was writing her dissertation at the Chair of Computational Modeling and Simulation: "The idea for accu:rate was born after the terrible events of the Loveparade in Duisburg 2010. I was in the middle of my doctorate on crowd simulations when I received numerous phone calls from the press, architects and security services. I thought it was a pity that the results of my doctorate, which could possibly prevent such disasters, should disappear into a drawer again, and I thought about how this could become a business", Kneidl explains. By simulating the movements and flows of people, Angelika Kneidl wants to improve safety at events and make buildings more comfortable for visitors.



they can actively contribute their ideas to the design and implementation of user-friendly products.

The result is a tool for digital collaboration in the form of web-based platforms, inspired by the principles of crowdsourcing, open innovation and agile software development. After the first successful customer use cases, the approach was extended to other stakeholders in the innovation process, so that companies can now use these solutions to access potential from their entire ecosystem – from their own employees, partners and suppliers to external databases. Thus, the leap into self-employment turned into one of the world's leading provid-

ers of software for the management of ideas and innovations – innosabi GmbH. With around 60 employees, the Munich-based company is developing innovative solutions for clients such as Bayer, Daimler and Siemens.



Catharina also represents the ICT industry's interests as a member of the board of the industry association Bitkom. She is co-author of the book *Connect the Dots – Agile Innovation and Collaborative Ecosystems*.

At bitkom, Catharina van Delden and the German Chancellor discussed the digital future of Germany.

KARIM TARRAF

IS COMMITTED TO CLEAN AIR



Karim Tarraf (Master Management & Technology 2016) became keenly aware of the issue of air purity at an early age. He grew up in Cairo – a city where air pollution is a serious concern. Tarraf's parents are both specialists in respiratory medicine and his brother suffers from asthma.

In 2016, he co-founded Hawa Dawa, a company specializing in the measurement and analysis of airborne pollutants. The name says it all: Hawa Dawa translates to air purity. Hawa Dawa uses data from existing data sources such as satellites or public measuring stations and integrates these into an on-

line platform. The measurement network is complemented by the company's own air quality nodes. The software is able to include additional factors such as traffic or weather in the data evaluation in order to provide a deeper look into the interrelationships and to show possible starting points for countermeasures. Demand for this air quality data is especially strong among cities looking for new concepts in, for example, traffic management. Continue reading at

go.tum.de/177697



DANIEL KEHNE

IS HELPING REFUGEES WITH LOCAL INTEGRATION

TUM Alumni Daniel Kehne has received a prestigious award. He is CIO of the year 2019.



TUM Alumni Daniel Kehne (Master Finance and Information Management 2019) received a special award last year. He was honored as CIO of the Year in the category Start-up for his commitment to building an app to help newcomers with local integration. "This award fills me with pride because it honors the achievements of the entire team and makes social entrepreneurship in Germany more visible – also in the IT sector", says Daniel Kehne.

The development of the so-called **Integreat-App** started in 2016 as a student project at the Chair of Information Systems with TUM Professor Helmut Krcmar. Its goal: to make important information available quickly and unbureaucratically for refugees arriving in Germany. The open source platform Integreat is currently used by one in six municipalities in Germany to facilitate and support local integration of immigrants. Integreat is also attracting great interest from abroad. The launch is imminent in Sydney – other major foreign cities have already expressed interest, too.



ANDREAS KUNZE

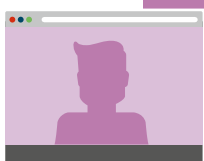
IS ENSURING THAT TRAINS ARE ON TIME

At just 23 years of age, TUM Alumni Andreas Kunze created his start-up KONUX, which develops combined systems of sensors and Artificial Intelligence. The technology is used in more than ten countries, including by Deutsche Bahn, and ensures that trains are more punctual. The company has been recognized by the World Economic Forum as a world-leading "Technology Pioneer".



The company uses sensor data to be able to make statements on the condition of facilities in the railway network, such as a switch. This allows for better planning of repairs and their scheduling to times of lower capacity utilization. This means that in the event of repairs, the entire operation does not have to be shut down. Across Europe, broken switches account for almost 20 percent of all delay minutes. "We want to play our part in making railway systems worldwide more reliable, so that more people and goods will be transported by this sustainable means of transport," says Andreas Kunze. At 23 percent, the transport sector is one of the biggest contributors to emissions worldwide. "However, the different modes of transport contribute to it in very different ways. Compared to air travel, rail only contributes 7 percent of emissions. If more people and goods were to travel by rail, this would contribute significantly to reducing emissions worldwide", Andreas Kunze explains. Continue reading

at www.150.alumni.tum.de/en/andreas-kunze-en



And we Have More:

In one of our last Alumni Newsletters we were looking for experts in digitalization from within the TUM Family. Numerous alumni have contacted us and want to share their experience in this field. Therefore, we would like to invite you to visit our TUM Community group "Experts in Digitalization". Meet other experts in the field and get in touch with each other. Simply go to www.community.tum.de, log in (TUM ID/password) and search for "Experts in Digitalization" in the groups section.

Just join the group and you are ready!

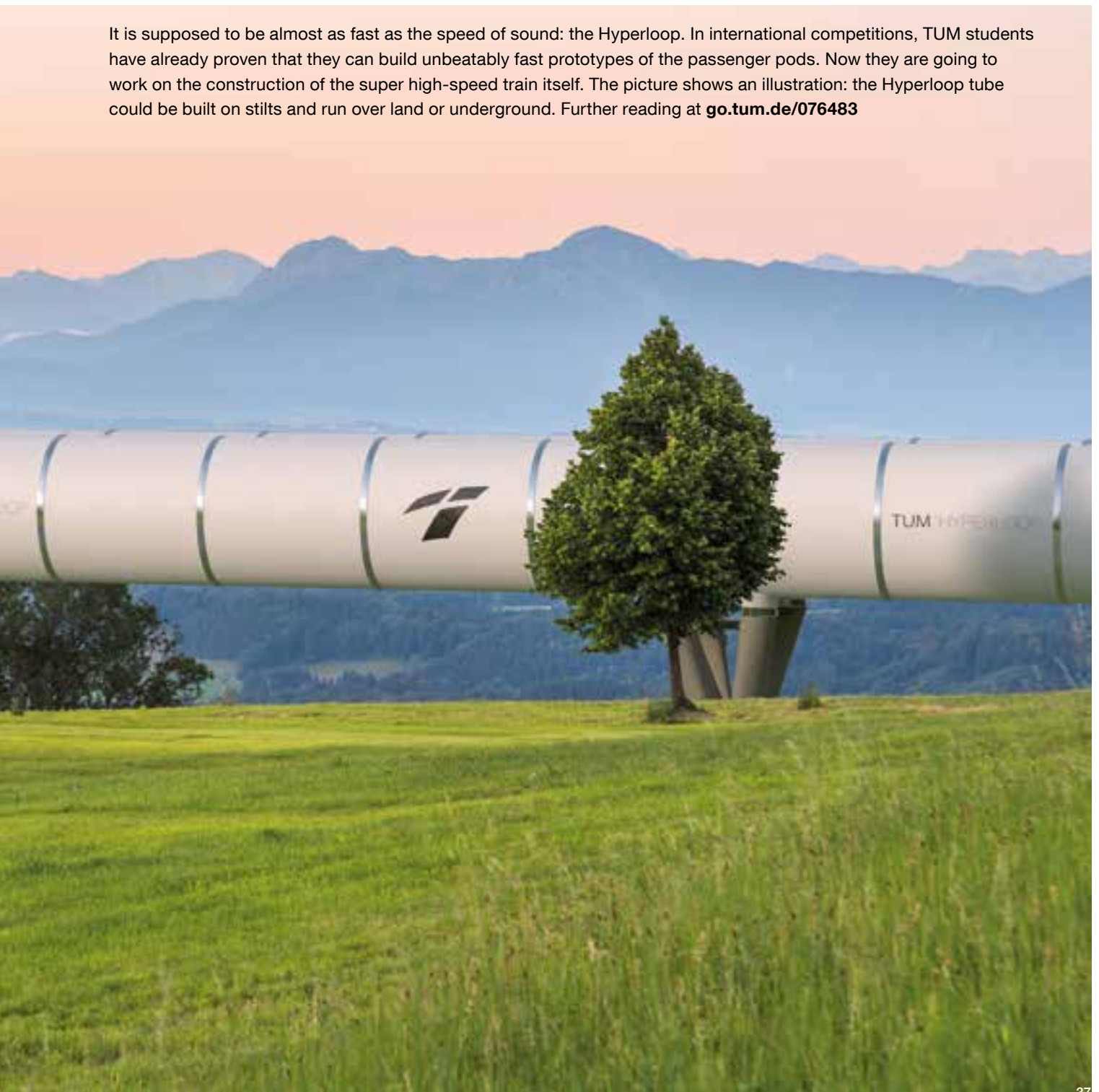
KontakTUM Program

For Alumni of the Technical University of Munich
Autumn/Winter 2020/2021



Due to the coronavirus pandemic, many of the following events are scheduled as online events. In the case of in-class events, these may have to be postponed or cancelled at short notice. We kindly ask you to check the respective website in advance to see if there are any changes to the event.

It is supposed to be almost as fast as the speed of sound: the Hyperloop. In international competitions, TUM students have already proven that they can build unbeatably fast prototypes of the passenger pods. Now they are going to work on the construction of the super high-speed train itself. The picture shows an illustration: the Hyperloop tube could be built on stilts and run over land or underground. Further reading at go.tum.de/076483



KNOWLEDGE FOR THE FUTURE

MOOC – ONLINE COURSE ON DIGITALIZATION IN AERONAUTICS AND SPACE

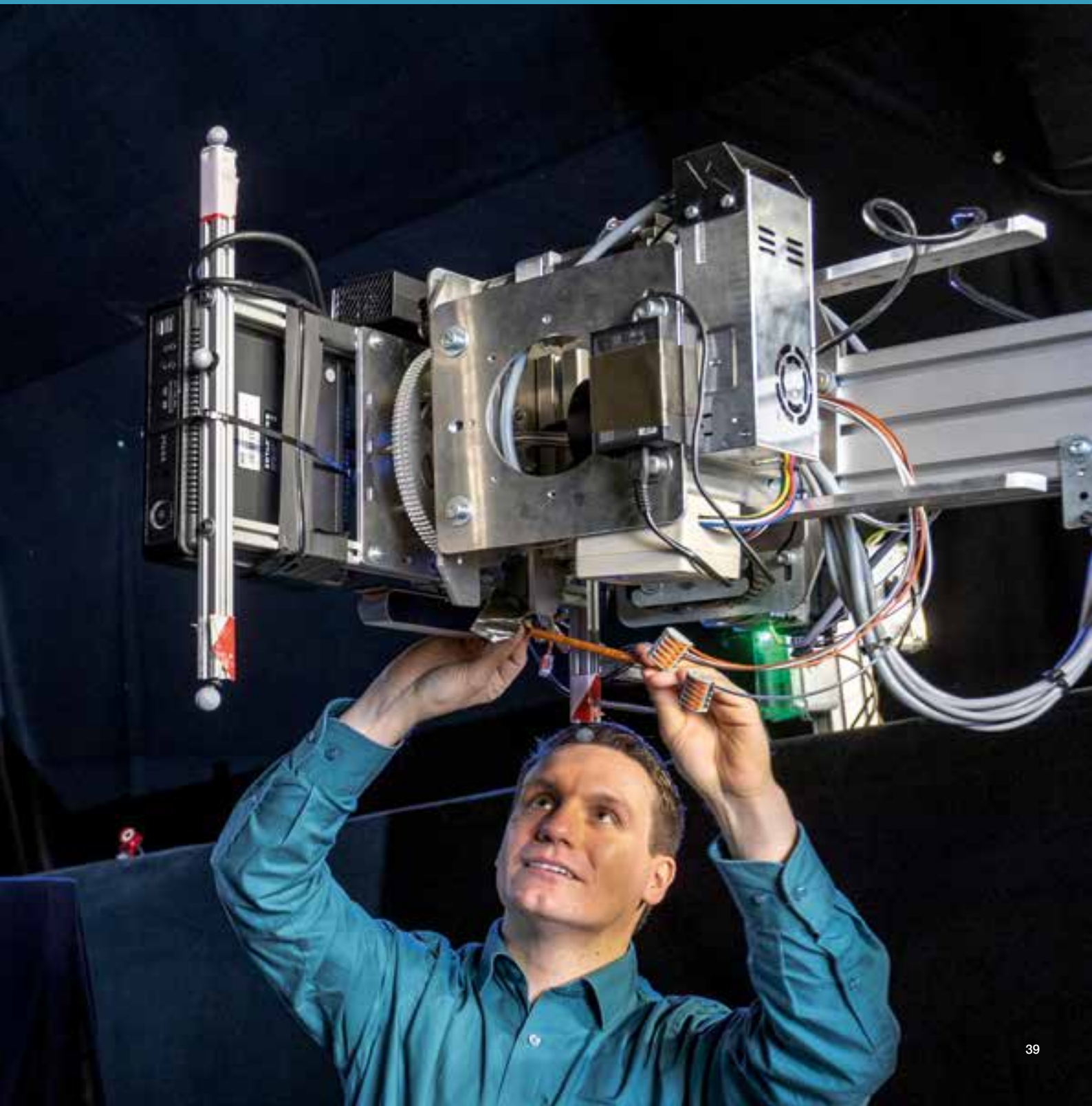
Aerospace drives technological transformation while being subjected to profound changes through digitalization. Making this change conceivable to the public is one of TUM's tasks, because it acts as a mediator between science and society. For this reason, TUM offers its alumni and students, as well as all those interested in technology free Massive Open Online Courses (MOOCs) that address current scientific topics – such as the new online course "Digitalization in Aeronautics and Space", which provides insights into the aerospace industry and the transformed working world of engineers. Further reading at go.tum.de/300192

Click here to get to TUM's MOOC program:

www.tum.de/en/lifelong-learning/moocs

A GLOBAL CENTER OF EXCHANGE: THIS IS WHAT TUM WANTS TO BE FOR PEOPLE FROM THE SCIENCES, BUSINESS, POLITICS AND SOCIETY. THIS IS WHERE STUDENTS AND ALUMNI CAN FIND INSPIRATION AND FURTHER TRAINING BEYOND THE BOUNDARIES OF THEIR OWN WORLD OF IDEAS, SHARE THEIR EXPERIENCES AND THUS GET READY FOR THE FUTURE.

TUM believes in being a lifelong educational partner for its members. As an Alumni of TUM you have the opportunity to participate in events, lectures, seminars and also learning formats such as the Massive Open Online Courses (MOOCs). Discover interesting facts about the latest developments in Aerospace or Architecture, or find out about the work of an experimental physicist at the Science Matinee. Stay in touch with your Alma Mater and keep educating yourself further in the institution that has provided you with an excellent education before.



LIFELONG LEARNING

Ready for a Changing World

Today's working world is changing more dynamically than ever before and is continuously confronting specialists and executives with new challenges. All the more important is the willingness and opportunities for lifelong learning. As a forward-thinking university, TUM has therefore established the TUM Institute for Life Long Learning to be a lifelong partner in education and training for its members.

www.tum.de/en/lifelong-learning



TUM HORIZONS (IN ENGLISH)

Further Training at TUM

The challenges of the 2020 summer semester have shown us that we still have a lot to learn when it comes to dealing with change. The focus has shifted to digital working – at home or in the office – as well as to the ongoing demands concerning the everyday life. TUM horizons offers workshops in all of these areas, thus providing plenty of opportunity for exchange and mutual learning – both in-class and online. Also for Alumni of TUM!

PLACE

Online and in-class events

REGISTRATION/INFO

Further training for members of TUM, some free of charge
www.horizons.tum.de

ONLINE COURSE (IN ENGLISH)

Digitalisation in Aerospace

Aerospace is an engine of technological change that is itself undergoing a far-reaching transformation through digital technologies. The new online course „Digitalisation in Aeronautics and Space“ offers insights into this process and how it is impacting the working world of engineers. With lecturers from several research institutions and leading companies, this free Massive Open Online Course (MOOC) is intended for professionals, students and anyone with an interest in technology as well as alumni, of course.

DATE

Accessible from Mon. 21.09.2020, flexible

PLACE

Online

REGISTRATION/INFO

Public event with registration, free of charge
go.tum.de/081405

TRAIF PREVIEW (IN ENGLISH)

Responsible Artificial Intelligence

The event gives a sneak peek into how the Institute for Ethics in Artificial Intelligence (IEAI) and its partners are promoting a sustainable, inclusive and comprehensive framework for the use of AI that delivers global benefit. In the virtual TRAIF Preview the IEAI shares its current research on AI ethics as well as expert panels on responsible use of AI in managing pandemics and the opportunities and challenges of AI in Africa. Join and get to know the IEAI!

DATE

Thur. 12.11.2020 – Fri. 13.11.2020, all day

PLACE

Online

REGISTRATION/INFO

Public event with registration, free of charge
ieai.mcts.tum.de/event/traif-preview

For Pupils

Discover how fascinating a degree and research in Natural and Technical Sciences can be before you even finished school! TUM offers numerous opportunities for prospective students and high-performing pupils.

www.explore.tum.de/studieninteressierte

Learning With MOOCs

Massive Open Online Courses (MOOCs) are interactive online courses that are accessible worldwide and free of charge. TUM is the first German university to publish its own MOOCs. The courses offered enhance the university's curriculum, but also provide alumni with access to education at the highest level.

For Specialists and Executives

Massive Open Online Courses (MOOCs) are interactive online courses that are accessible worldwide and free of charge. TUM is the first German university to publish its own MOOCs. The courses offered enhance the university's curriculum, but also provide alumni with access to education at the highest level.

UNIVERSITY ORIENTATION (IN GERMAN)

“Ran an die TUM”

Your juniors are interested in studying at TUM? Then the event series “Ran an die TUM: Perspektive Studium” is just what you need. Every week one of the different areas of study at TUM is introduced – in the upcoming semester this will be done via livestream: what do the Internet, robots and solar energy systems have in common, how can technology and politics be brought together, and what is actually happening at the TUM Campus Straubing for Bio-technology and Sustainability? Every Thursday different questions will be answered. Join us!

DATE

Thursdays
5.30 pm – 7 pm

PLACE

Online

REGISTRATION/INFO

www.explore.tum.de/ran



LECTURE SERIES (IN GERMAN)

Digital Urban Transformation

Munich is growing, and so is the traffic. People are changing their patterns of mobility, and then there is digitalization as well. The lecture series, organized by TUM's Chair of Urban Development, will shed light on the conditions and consequences of the digital transformation for urban mobility – also available digitally. Come and join the discussion!

DATES

Tue. 17.11.2020, Tue. 15.12.2020,
Tue. 12.01.2021, 6.30 pm – 8 pm

PLACE

TUM Campus Munich

REGISTRATION/INFO

Public event with registration,
free of charge
[www.ar.tum.de/en/re/
public-lecture-series-public-transport](http://www.ar.tum.de/en/re/public-lecture-series-public-transport)

LECTURE SERIES (SOME IN ENGLISH)

Munich Talks

With the motto “Bringing Politics and Technology Together”, the TUM School of Governance regularly invites top-class speakers from science, politics and society to enable the public to experience politics. José Manuel D. Barroso, former President of the European Commission, is one of the previous guests, as is philosopher Martha Nussbaum, whose lectures can also be found online at munich-talks.de.

DATES

Winter 2020/2021

PLACE

TUM School of Governance Munich,
Richard-Wagner-Straße 1, Munich

REGISTRATION/INFO

Public event with registration
<https://munich-talks.de/>

SCIENCE DIALOGUE

Science Up Close

Making science and research accessible and understandable to the public is one of the guiding principles of TUM. The university identifies as a companion of social change and showcases how TUM contributes to our future in terms of science and technology and how it prepares young people and its alumni for the tasks ahead. Many of the in-class and online events at TUM provide the opportunity to gain insights into current science projects and innovative developments, or to look back on how our modern world evolved.

Stay up to Date!

Whether it's traditional print media, radio, film, television or the Internet – TUM is using different channels to provide you with up-to-date information.

CONFERENCE (IN GERMAN)

GI Round Table Munich 2021

For more than 20 years now, the Round Table GeoInformationsSysteme (GIS) e.V. and the TUM Chair of Geoinformatics have been organizing the GI Round Table Munich: a two-day seminar on current, relevant topics in Geoinformatics. The conference aims to bring together science, industry and public authorities. In two parallel sessions, participants will be presented with an extensive specialized program. Participants can choose between science, practical application and innovation. TUM Alumni are very welcome!

DATE

Tue. 23.03.2021 – Wed. 24.03.2021
all day

PLACE

TUM

REGISTRATION/INFO

Public event with registration,
attendance fee
<https://rundertischgis.de/aktuelles/termine.html>

SCIENCE MATINEE (IN GERMAN)

Past and Future of Artificial Intelligence

In the Science Matinee titled “What are our neighbors, the scientists in Garching, up to?” on Sunday morning at the Institute for Advanced Study, **Prof. Dr. Daniel Cremers** will give the audience an introduction to Artificial Intelligence and Image Processing. He will specifically inquire about how computers can be taught to use cameras to see the world. To answer this question, he and his team have developed a number of methods, from suitable optimization techniques to neural networks. The range of applications in this field is almost infinite – from 3D photography and 3D television to self-driving cars and autonomous quadcopters. Prof. Dr. Daniel Cremers holds the Chair of Computer Vision and Artificial Intelligence at TUM.

Science Matinee as Audio Version

Here you can listen online to the most recent lecture of the Science Matinee by Prof. Dr. Laura Fabbietti: www.ias.tum.de/events/nachbarn

DATE

Sun. 22.11.2020, 11 am – 12 am

PLACE

TUM Campus Garching, Auditorium, IAS,
Lichtenbergstraße 2a

REGISTRATION/INFO

Public event with registration,
free of charge
www.ias.tum.de/events/nachbarn

In her online talk “Per Aspera ad Astra”, Prof. Laura Fabbietti talks about neutron stars and the production of antimatter in our galaxies.



Here you will find recent campus news or the latest scientific findings – everything that matters to the TUM Family:

www.tum.de/en/about-tum/news

Have you missed a program?

The media page contains a selection of current TV and radio programs about TUM:

www.tum.de/die-tum/aktuelles/tum-in-den-medien

An overview of events and dates at TUM can be found here:

portal.mytum.de/termine

EXHIBITIONS

The Role of Computers in Architecture

For the first time in the German-speaking world, the exhibition “The Architecture Machine” at Architekturmuseum der TUM in the Pinakothek der Moderne takes a comprehensive look at digital development in architecture. From its beginnings in the 1950s to the present day, the architecture museum tells this exciting story. The fundamental question behind it: has the computer changed architecture, and if so, how?

TUM's Museum of Architecture

The history of TUM's Museum of Architecture goes back to 1868 – at that time it was still a teaching collection for architectural education at the New Polytechnic College. In the first half of the 20th century, the field of Architecture changed and so the historical model collection was transformed into an archive, which since 1975 has gradually taken on the functions of a museum. Under TUM Professor Winfried Nerdinger, who was appointed the first Director of the TUM Museum of Architecture in 1988, the museum gained international recognition. After Prof. Nerdinger's retirement in 2012, Andres Lepik was appointed Professor of Architectural History and Curatorial Practice at TUM and is the new Director of the Museum of Architecture.

Read the alumni story of TUM Emeritus of Excellence Winfried Nerdinger at:

www.150.alumni.tum.de/en/winfried-nerdinger-en

DATES

The Architecture Machine

Wed. 14.10.2020 – Sun. 10.01.2021
all day

New Neighbors

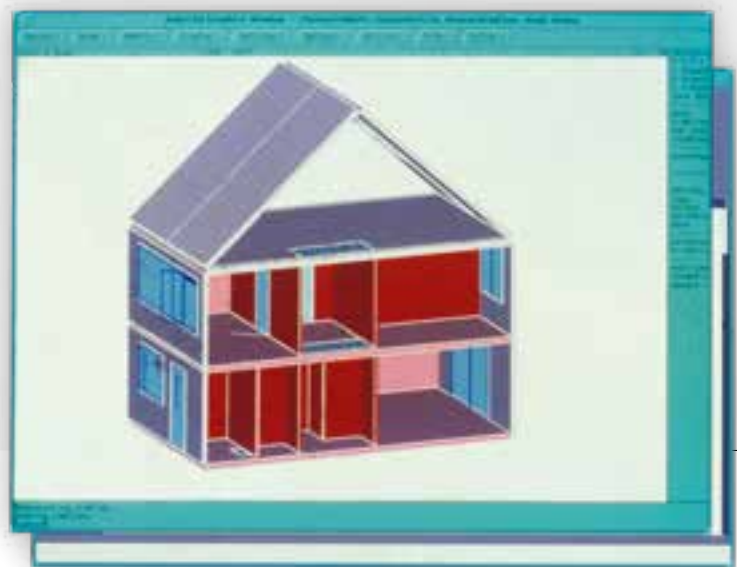
Thur. 11.02.2021 – Sun. 06.06.2021
all day

PLACE

Architekturmuseum der TUM
at Pinakothek der Moderne,
Barer Straße 40, Munich

REGISTRATION/INFO

Public event without registration
www.architekturmuseum.de/en/aktuell



This CAD sketch by TUM Alumni Prof. Richard Junge (Diploma Architecture 1969) is part of the collection of the Chair of Architectural Informatics at TUM and can be seen in the exhibition “The Architecture Machine”.

MAKING THE WORLD A BETTER PLACE

Sustainable Solutions for the Future

Research that opens up new energy resources, degree programs that train for work in sustainability, lectures on climate, energy-efficient buildings: TUM has recognized how important it is that the topic of sustainability is researched, taught and practiced at our university. The lecture series "Environment" has had a long tradition and is now also available in a digital format. Let top-class speakers bring you up to speed on current environmental issues or learn about the fuel that will be used to fly the aircraft of the future in Professor Thomas Brück's lecture – exclusively for TUM Alumni. Or find out about the visions of city architect Tina Saaby in her lecture at Oskar von Miller Forum.

LECTURE (IN GERMAN)

Algae – Tomorrow's Potential Fuel

How can we use algae for sustainable energy production? TUM Professor Thomas Brück holds the Chair of Synthetic Biotechnology and is an internationally renowned expert in the field of algae technology. At TUM's unique Algae Cultivation Center in Ottobrunn, he is researching the possible applications of salt-water algae, for example to produce biofuel and carbon fibers. In this lecture he explains his research in a descriptive and entertaining way.

DATE

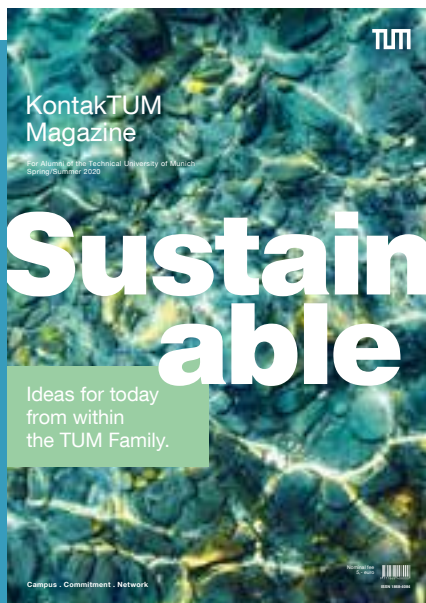
Thur. 12.11.2020

6 pm – 8 pm

PLACE

TUM Campus Garching

REGISTRATION/INFOwww.community.tum.de/veranstaltungen



Continue reading:

KontaktTUM Spring/Summer 2020

"Sustainable: Ideas for today from within the TUM Family."

www.community.tum.de/en/publications

LECTURE SERIES (IN GERMAN AND ENGLISH)

Lecture Series 'Environment'

For more than 35 years, the Environmental Department of the TUM Student Representation has been organizing this lecture series every semester. Speakers from research, organizations, authorities and corporations will talk about technical solutions to environmental problems, health or climate protection under one central theme. For alumni, the lecture series is another excellent opportunity to reconnect with TUM. For those who prefer to learn about current environmental matters from their home, the lectures will be recorded and are available to all interested parties on the Environmental Department's website.

INFOS

TUM Campus Munich, every Wednesday during the lecture period, 7.30 pm – 9 pm

TUM Campus Garching, every Tuesday during the lecture period, 6 pm – 7.30 pm

REGISTRATION

Public event without registration, free of charge
asta-umweltreferat.fs.tum.de/?page_id=2231

LECTURE (IN GERMAN)

Sustainability's Visions

This summer semester, the Oskar von Miller Forum invited Prof. Dr. Harald Welzer. The sociologist and social psychologist is co-founder and director of FUTURZWEI.Stiftung Zukunftsfähigkeit, director of the Norbert Elias Center for Transformation Design & Research at Europa-Universität Flensburg and permanent visiting professor at the University of St. Gallen. He has written numerous books on sustainability and held a lecture on "Sustainability's Visions For The Future" in Munich. Like many of the others of the Oskar von Miller Forum, the lecture is now available online.

INFOS

Recording without registration, free of charge
www.oskarvonmillerforum.de/en/home

LECTURE (IN ENGLISH)

Feeling the City

The Oskar von Miller Forum is inviting city architect Tina Saaby, who has worked as the Chief City Architect of Copenhagen for many years and was awarded honorary membership of the Association of German Architects (BDA) in 2019. In her lecture she will share her experiences from projects with citymakers, politicians and citizens around the world. She will address issues such as climate change, placemaking, bike culture and nature in the city and will show how cities can be successfully designed for and in dialogue with people. Alumni are very welcome to attend.

DATE

Thur. 26.11.2020, 6.30 pm – 8 pm

PLACE

Munich, Oskar von Miller Forum, Oskar-von-Miller-Ring 25

REGISTRATION/INFO

Public event with registration, free of charge
www.oskarvonmillerforum.de/en/home

A WORLDWIDE NETWORK

The TUM Family

TUM is a worldwide network of students, researchers and alumni of all ages and disciplines. The TUM Family members support each other as a source of motivation, as advisors and friends, they share their life experience and keep the exchange between the generations alive. Take advantage of the many opportunities to learn new things together, to experience interesting things and to get and stay in contact with one another, whether it's on one of the group hikes, the virtual campus run or in the Bund der Freunde der TUM. Get involved and make friends for life.



GUIDED TOUR INCLUDING CHRISTMAS MARKET (IN ENGLISH)

On Tour with our Guests

Blutenburg Castle was built in 1433 and today houses the International Youth Library. On our 90-minute tour we will get to know the castle and learn more about its history, as well as the beginnings, the mission and the tasks of the International Youth Library following the end of World War II. The tour takes us through the reading room, the hallway gallery, all the permanent exhibitions, and the medieval chapel. As the annual Christmas market of Blutenburg happens to take place on the same weekend, we will have the opportunity to enjoy a cup of Glühwein afterwards in the castle's beautiful courtyard.

DATE

Sat. 05.12.2020

PLACE

Munich, Blutenburg Castle

REGISTRATION/INFOwww.community.tum.de/veranstaltungen

TUM GLOBAL DIALOGUE SERIES (IN ENGLISH)

A Worldwide Network

This autumn, the TUM Global Network is launching a new event series: the TUM Global Dialogue Series. The TUM Liaison Officers and the TUM Asia Team will organize virtual events at regular intervals in order to promote the dialogue between TUM scientists, their affiliates and the social players in the respective regions while presenting them to an interested general public. Join us and learn more about TUM's commitment in Africa and the challenges at the TUM Asia Campus in Singapore.

DATES

Several dates in the winter semester.

See also p. 55

PLACE

Online

REGISTRATION/INFOwww.international.tum.de/globalevents

NEW TUM LIAISON OFFICERS

The TUM Liaison Office is located in the immediate vicinity of Silicon Valley. Since mid-2020 **Jeff Ouimet has been the new Liaison Officer in San Francisco**. With more than 25 years of experience as an attorney and patent attorney specializing in intellectual property law and international business relations, he is now supporting TUM with regard to its North American partnerships. www.international.tum.de/en/sanfrancisco



The new Liaison Officer in Mumbai is Mohaa Vyas. She already has many years of experience in international higher education and a large active network which she will use for TUM activities in India. She is especially looking forward to meeting TUM Alumni on site. www.international.tum.de/en/mumbai



Ready, Set, Go!

Since the first virtual edition of the TUM Campus Run was such a success, a second one will be held in November. All TUM members with a TUM ID can take part. As usual, there will be two routes of different lengths, one of 5.5 and one of 11 kilometers. The photo credits for the run have to be uploaded by Sunday, the 15th of November 2020 – the most creative pictures of the course will be awarded. The criteria are form, idea and implementation. Join in and get some "TUM Community feeling despite coronavirus,,".

DATE

Fri. 13.11.2020 – Sat. 14.11.2020
all day

PLACE

worldwide

REGISTRATION/INFO

Public event with registration until
12th of November 2020, free of charge
www.ja.tum.de/en/campusrun

TUMGESUND HIKE

Hiking with the TUM Family

As part of the TUM-internal health promotion program TUMgesund, TUM Alumna Denise Lichtig (Diploma Horticultural Sciences 1998) once a month offers an easy hike in the surrounding areas of Munich – exclusively for TUM Alumni and employees. Take a day off from everyday life and spend a pleasant and relaxed day in the Bavarian Alps – together with other members of the TUM Family. Denise Lichtig – today Head of the TUM Language Center – has been hiking in the mountains regularly since she was a teenager and is a hiking guide with the German Alpine Association. On a TUM hike, one thing is particularly important to her: "When we are hiking, everyone is part of the community."

DATE

Once a month

PLACE

Around Munich

REGISTRATION

alumniundcareer@tum.de

FRIENDS FOR LIFE

Bund der Freunde der TUM is TUM's long-standing association of supporters. Here you will find a wonderful active and lively network in the midst of the TUM Family. As a non-profit organization, it supports TUM in science, research and teaching and especially promotes the new generation of scientists.

Support your university. **Become a member!**

www.bund-der-freunde.tum.de

"We worked day and night on our remote-controlled aircraft model alongside our studies – and then won first prize with our team in the Air Cargo Challenge 2019. That was overwhelming. Bund der Freunde supported us and covered the registration fee.

It's great to have friends like that."



Paula Zimmermann
AkaModell München e.V.

MOTIVATION THROUGH EXCHANGE

Women of TUM
Log in to the
TUM Community
and be a part of it



www.community.tum.de/en/women

THE WOMEN OF TUM FORM A VIBRANT NETWORK THAT IS GROWING RAPIDLY AND CONNECTING WOMEN ACROSS CONTINENTS, GENERATIONS, HIERARCHICAL LEVELS AND PROFESSIONAL DISCIPLINES. AT EVENTS ORGANIZED BY WOMEN FOR WOMEN, FEMALE ENTREPRENEURS PROVIDE INSIGHTS INTO THEIR INDUSTRIES, FEMALE SCIENTISTS EXPLAIN THEIR RESEARCH AND EXPERIENCED FEMALE ALUMNI SHARE VALUABLE FINDINGS WITH THE YOUNGER GENERATION.

The Women of TUM Network is also meeting online in the TUM Community. It is one of the most active among the TUM Community groups. The hashtag #womenofTUM makes the Women of TUM visible on social media. As important role models, the Women of TUM support the women of TUM for the future – both in the workplace and at home.

www.community.tum.de/en/women



FROM COMPETITIVE SPORTS TO DOCTORATE WITH DISTINCTION

Dr. Vanessa Wergin's (Doctorate Sport Psychology 2019) life is still entangled with the failure of her own team at the 2004 European Artistic Roller Skating Championship. But it was also what drove her to do research in the field of Sports Psychology and to do her doctorate at TUM. Her research is the first to provide a process model that describes various triggers of collective performance collapse in sports teams and sheds light on how these triggers are connected and interlinked. "In my time as an athlete, I myself would have benefitted greatly from the knowledge I have today", says the TUM Alumna, who has earned a doctorate at TUM and has since been working as a postdoc at TUM. "Now I would like to help athletes with my research."

Read more at www.150.alumni.tum.de/en/vanessa-wergin-en

At the Women of TUM Talks on the 7th of October 2020 Vanessa Wergin talked about her experiences as a competitive athlete and top researcher and held a lecture on motivation and assertiveness. The recording of the Women of TUM Talks is available here:

www.community.tum.de/en/women

NEW WEBSITE

Women of TUM Online

Numerous women from all over the world are active members of the Women of TUM Network. They are not only visible online through the hashtag #womenofTUM, but also on the new Women of TUM website, which now has a completely new look. Here you have access to all the latest information on events as well as the dates of those events that have been arranged at short notice. Browse through the portraits of the Women of TUM and get to know other women who work in your field. Perhaps this makes you want to contact them directly? You can do so very easily after logging in via the Women of TUM Group.

www.community.tum.de/en/women



WOMEN OF TUM AFTERWORK EVENT (IN ENGLISH)

Climate Activism

Speaker at the November event of the Women of TUM Afterwork series is TUM Alumna Ramona Wüst. She is co-founder of the "Fridays for Future" movement in Munich and actively engaged in changing climate policy. However, "a change in thinking also has to happen at the university", she says: "This change is necessary to prepare students for the challenges resulting from the climate crisis." At the Women of TUM Afterwork event she talks about her activism and why a social-ecological change requires social integrity.

An interview with Ramona Wüst from 2019 is available at go.tum.de/500648

DATE

Tue. 10.11.2020

7 pm – 8 pm

PLACE

Online

REGISTRATION/INFO

www.community.tum.de/veranstaltungen

WOMEN OF TUM AFTERWORK EVENT (IN ENGLISH)

Digital Transformation

Creator or destroyer? The roles of a manager for digitisation are extremely multifaceted. In order to master all these roles, you need to be very good at acting on your own initiative, (self-) reflection and enjoying change. TUM Alumna Katsiaryna (Katja) Apalkova (Master Consumer Science 2014) is manager of digitisation at Münchner Klinik and responsible for strategy development, as well as planning and implementation of the department's internal digitisation project. In her talk, she will demonstrate why digitisation management is more than just IT-related project management.

DATE

Wed. 02.12.2020

7 pm – 10 pm

PLACE

Online

REGISTRATION/INFO

www.community.tum.de/veranstaltungen

WOMEN OF TUM TALKS 2020 (IN GERMAN) EVENT RECORDINGS

"Motivation" was the topic of this year's Women of TUM Talks. Three female alumni from academia and industry addressed the following questions: Why are people motivated differently? Can motivation be learned? How do I motivate others? In the subsequent panel discussion, the hypothesis "Motivate yourself, because nobody else will do it for you?" was discussed and questions from the audience were answered. A recording of the event is available at www.community.tum.de/en/women



Inspiring Events

From Afterwork events to the Women of TUM Talks: The Women of TUM website provides you with comprehensive information on upcoming events.

Fascinating Portraits

Business women, female researchers and entrepreneurs: Find out who studied with you at TUM and have a look at the inspiring stories of our Women of TUM.

Network Snapshots

Finding yourself unfortunately unable to attend an event? The Women of TUM picture gallery gives you some impressions of the previous events.

WOMEN OF TUM WORKSHOP (IN ENGLISH)

Bye Bye Perfectionism

Could perfectionism be holding you back? Are there goals you long to achieve, but you're waiting for the perfect moment or for all the pieces to fit perfectly into place? In this interactive workshop, you will learn how to identify and intercept self-sabotaging perfectionist behaviors, and learn practical techniques to help you shift into action, so that you can be more productive, feel less stressed, and achieve your goals faster. Co-Active Coach Elizabeth Skinner works with ambitious women to help them uncover what they really want in life and create a plan to achieve their goals so they can start reaching their full potential.

DATE

Tue. 26.01.2021

7 pm – 10 pm

PLACE

TUM Campus Munich

REGISTRATION/INFO

www.community.tum.de/veranstaltungen

WORKSHOP (IN GERMAN)

Electrical Engine for Girls

Your daughter, granddaughter or niece is a technophile? Anyone who wants to satisfy their curiosity about technology by trial and error is in the right place at the Girls' Workshop: building an electric motor themselves, understanding and being able to explain solar systems and soldering electrical decision-making aids – the Girls' Workshop allows girls from the 9th grade up to acquire skills that others only dream of. In addition, the participants will explore the campus together and take a look behind the scenes of an academic chair. A female student is always at hand to help with advice and practical support.

REGISTRATION/INFO

Registrations and questions via email to schule@ei.tum.de

www.ei.tum.de/studium/

[schuelerinnen-und-schueler](#)



GIRLS DAY (IN GERMAN)

The Future Needs Girls

Girls' Day – the future day for girls is the largest career orientation project for schoolgirls worldwide. Since 2001, companies, businesses and universities throughout Germany – including, of course, TUM – have been opening their doors to female pupils from the 5th grade up on this day. The girls learn about apprenticeships and degree programs in IT, trades, natural sciences and technology.

DATE

Thur. 22.04.2021

all day

PLACE

all TUM Campuses

REGISTRATION/INFO

www.explore.tum.de/schuelerinnen/girlsday





WE ARE PROUD OF YOU!

Two Nobel Prize winners, two golden jubilees: TUM Alumni Prof. Erwin Neher and Prof. Joachim Frank have each been awarded the Nobel Prize for their outstanding scientific achievements. This year they are both celebrating their golden jubilee at TUM: for both of them it has been 50 years since they earned their doctorate from TUM.

Prof. Dr. Joachim Frank

DOCTORATE PHYSICS 1970

For Joachim Frank, the Nobel Prize is a major recognition of forty years of scientific work, the success of which was often uncertain. With his doctoral supervisor at TUM, Joachim Frank argued passionately about how biological molecules can best be represented. After his doctorate, he went to the USA with a scholarship, where he is now Professor of Biochemistry and Molecular Biophysics at Columbia University. Together with Jacques Dubochet and Richard Henderson, he was awarded the Nobel Prize in Chemistry in 2017 for his groundbreaking work on the development of cryo-electron microscopy. Continue reading at www.community.tum.de/en/joachim-frank

A full-page portrait of Prof. Dr. Erwin Neher. He is an older man with a grey beard and glasses, wearing a grey blazer, a light blue shirt, and a dark tie. He is standing outdoors on a paved area, leaning against a white pillar. He holds a book in his left hand. In the foreground, there are some purple flowers. The background shows a building and some greenery.

Prof. Dr. Erwin Neher

DIPLOMA PHYSIK PHYSICS, PROMOTION 1970

As a child, Erwin Neher was already fascinated by Biology and natural phenomena. In the fall of 1963, he went to TUM to study Physics: the highly problem-oriented coursework there was a great help for his later research. Later, during his doctorate, he met the physician Bert Sakmann. Together they had many lively discussions, became friends and together they pursued research into the detection of single ion channels in cells, for which they were awarded the Nobel Prize in 1991. Since 1983 Erwin Neher has been Director at the Max Planck Institute for Biophysical Chemistry in Göttingen. Continue reading at www.community.tum.de/en/erwin-neher

The Silver and Golden Jubilees 2020 are Important to us

During Advent season, TUM traditionally celebrates the achievements of its silver and golden jubilees, who completed their diploma or doctorate 25 or 50 years ago. With a heavy heart, the TUM Board of Management had to postpone the anniversary celebrations until next year due to the coronavirus pandemic. The honoring of the silver and golden jubilees will be held as soon as possible. Please send us an e-mail at alumniundcareer@tum.de if you have any questions.



TUM ADVENT CONCERTS

This Year Everything is Different

Due to the current situation, the TUM Board of Management has decided to call off the 2020 Advent Concerts at the Philharmonic Hall in Munich's Gasteig music venue. We hope to be able to welcome the entire TUM Family back there again next year. In the meantime, you will find the recordings of the past years on the TUM YouTube channel to watch and listen to.

www.community.tum.de/veranstaltungen/#vivat-tum



ANNUAL ACADEMIC CELEBRATION (IN GERMAN)

Dies Academicus Novus

The Dies Academicus takes a look back at the exceptional year 2020 and provides an outlook on how TUM will continue on its successful trajectory in the future. In order to reach as many people as possible while observing the necessary hygienic and social distancing rules, the festive event will be spread across all TUM locations for the first time. In line with the central theme "The Corona Challenge: Lessons Learned – Future Perspectives", live programs on site will be combined with livestreams.

DATE

Thur. 03.12.2020
10 am – 1 pm

PLACE

All TUM Campuses

REGISTRATION/INFO

www.tum.de/en/about-tum/news/events/dies-academicus/

To the TUM Graduates of 2020



The summer semester of 2020 was more than out of the ordinary and has confronted the students with an unprecedented situation. They have experienced our world at a standstill like no one else before. In order to protect the older members of our society and those at risk, they have left their academic home – TUM –, sat down at their desks at home and retreated to virtual teaching formats, thus supporting the fight against the pandemic. In a personal letter, President Thomas F. Hofmann expresses his thanks and gives reassurance for the future.

Read online at www.community.tum.de/en/presidential-letter-2020

HONORING THE TUM AMBASSADORS 2020

Ambassadors of TUM

For many decades, guest researchers have been coming to TUM from all over the world. They conduct research and publish here and exchange ideas with their local colleagues. In doing so, they are not only enriching our university with their scientific expertise and international experience, but also with their eagerness to cooperate and their multifaceted commitment. In recognition of their merits, the President of TUM has annually awarded some of these top international researchers the honorary title "TUM Ambassador" since 2013. They are representing all TUM Research Alumni worldwide.

www.community.tum.de/forscheralumni/#ambassadors



TUM Ambassadors 2019 with TUM President Thomas F. Hofmann and Vice President Juliane Winkelmann.

TUM AMBASSADORS 2020

- **Prof. Stephen Hilgartner**
Professor at Cornell University, USA
- **Prof. Camilla Hollanti**
Professor at Aalto University, Finland
- **Prof. Dr. Yannis Kevrekidis**
Professor at Johns Hopkins University and Princeton University, USA
- **Prof. Dr. Tinsely Oden**
Professor at the University of Texas at Austin and Oden Institute for Computational Engineering and Sciences, USA
- **Prof. Kai-feng Pan**
Professor and Vice President at Peking University Health Science Center, China
- **Prof. Grigorios Pavliotis**
Professor at Imperial College London, UK
- **Prof. Gerhard (Gary) Schenk**
Professor at the University of Queensland, Australia
- **Prof. Maya Schuldiner**
Professor at the Weizmann Institute of Science, Israel
- **Prof. Dr. Jason Bennett Thatcher**
Professor at Temple University, USA
- **Prof. Dr. Shuguang Zhang**
Professor at Beihang University (Beijing University of Aeronautics and Astronautics), People's Republic of China

TUM GLOBAL DIALOGUE SERIES (IN ENGLISH)

Discussion with a TUM Ambassador



The TUM Global Office organises an event in cooperation with TUM Ambassador Prof. Bing Wang. The virtual panel discussion with TUM professors and representatives from Chinese industry will focus on the topic "Application of Artificial Intelligence in the Aerospace Industry". Prof. Bing Wang is a professor at Tsinghua University in China and as an Alexander von Humboldt Fellow he has been a frequent guest at TUM's Chair of Hydromechanics since 2006.

DATE

November 2020

PLACE

Online

REGISTRATION/INFO

www.international.tum.de/globalevents

LEARNING AND GROWING TOGETHER



TUM Alumna Dr. Nora Els (Master Ecological Engineering 2016) was looking for support for her return to work after maternity leave. In Friederike Ott, who has also studied at TUM (Diploma Ökotrophologie 1977), she not only found her perfect mentor, but through her assistance she also found a new job. Continue reading at www.150.alumni.tum.de/en/ott-els-en

LEARNING AND GROWING TOGETHER: IN LINE WITH THIS MOTTO, THE MUTUAL EXCHANGE OF GENERATIONS ON THE TOPIC OF LIFE AND CAREER PLANNING TAKES CENTER STAGE AT TUM.

This happens for example in TUM Mentoring as well as at the regular Career Lounges – this year also in the virtual space. The exclusive panel discussions with top-class guests from the ranks of our alumni, provide the opportunity of meeting interesting personalities from various industries. Or you can join us for a collective exchange of ideas, at which young professionals and executives get together to trade experiences. No matter in which phase of your life you find yourself, you are cordially invited.



MENTORING

Sharing Experience and Know-How

Mentoring thrives on exchange: Experienced mentors share their knowledge, experience and insights with their mentees, they give advice and feedback, but in turn benefit from the mentoring relationship themselves. Their mentees also provide feedback and inspiration and frequently ask questions that stimulate reflection. In TUM Mentoring, TUM Alumni support students and doctoral students over the course of one year. But TUM Alumni are also welcome to join the program: at JobTalk they are matched for one question only, at TUM Mentoring Professional alumni support and inspire each other. Scientists are also able to find a suitable sparring partner in TUM Mentoring.

TUM MENTORING EVENT SERIES (IN GERMAN)

How to start up?

What sparked the founding idea? Which challenges did you overcome? What was your seed capital? And which questions would you like to ask entrepreneurs? TUM mentors with different start-up experiences provide insights into their businesses. In the end, you have the opportunity to pitch your own ideas and get feedback. TUM Alumna and mentor Marta Krawczyk (Bachelor Physics 2009, Master 2011), who started her own company in 2019, which analyzes and optimizes production processes, will kick off the event.

DATE

Tue. 24.11.2020

7 pm – 9 pm

PLACE

Online

REGISTRATION/INFOwww.community.tum.de/veranstaltungen

TUM MENTORING LECTURE (IN GERMAN)

Key Factor for Success

Who do you communicate with every day? How often is this communication successful so that you and your counterpart are satisfied? Successful communication frees up a lot of time, resolves or even avoids conflicts faster and leads to more clarity – also with regard to your own needs. In her lecture, TUM Alumna Marion Kaiser (Diploma Aerospace Engineering 1992) demonstrates how this can be achieved. The TUM mentor and trainer gives insights into non-violent communication according to Dr. M. Rosenberg and explains how interpersonal cooperation can be improved.

DATE

Tue. 01.12.2020

7 pm – 9 pm

PLACE

Online

REGISTRATION/INFOwww.community.tum.de/veranstaltungen

TUM MENTORING WORKSHOP (IN GERMAN)

Vitality in Stressful Times

The pandemic has radically changed the lives of many: How do I manage my vitality in times of stress? How can I gain energy when I cannot change reality? These questions are the focus of the workshop by TUM Alumni and mentor Karl Fordemann (Diploma Brewing and Beverage Technology 1980). The event is exclusively for mentees of the program TUM Mentoring for Students by Alumni.

DATE

Sat. 05.12.2020

2:30 pm – 4 pm

PLACE

Online

REGISTRATION/INFOwww.community.tum.de/veranstaltungen

TUM Mentoring JobTalk

Would you like to know more about the daily routine of a consultant or about the training to become a patent attorney? Formulate your question and we will put you in touch with an experienced matching alumni as soon as possible. JobTalk is instant mentoring: students (and also alumni) are asking specific questions, alumni answer and provide their assessment and experience. Personal contact via telephone, video call or a meeting is possible in a timely and uncomplicated manner. This is how easy intergenerational exchange can be!

INFORMATION

mentoring@tum.de

REGISTRATION

www.community.tum.de/veranstaltungen

BY ALUMNI FOR STUDENTS, DOCTORATE STUDENTS AND ALUMNI

The Different Mentoring Programs

TUM MENTORING CLASSIC

TUM Alumni support TUM students and doctoral students for the duration of one year. They are available to answer questions and support them one-on-one in their personal development.

TUM MENTORING PROFESSIONAL

Are you already working and about to face your next challenge?
Why not take advantage of the know-how and expertise of other TUM Alumni?

TUM MENTORING FOR SCIENTISTS

Mentoring for Scientists connects (international) research alumni and guest scientists with doctoral students and postdocs. Why not benefit from the knowledge of experienced scientists?

Further mentoring programs at TUM are listed here:

www.community.tum.de/en/mentoring



MENTORING TANDEM DR. DOMINIK VON AU AND MORITZ KAGERER: "WE ARE CHALLENGING EACH OTHER"

If TUM Alumni Dominik von Au and his mentee Moritz Kagerer were race drivers, they would most certainly be at the front of the field. The determination they both have with regard to their careers is remarkable. In their mentoring partnership this is mutually beneficial.

Continue reading

www.150.alumni.tum.de/en/au-kagerer-en

CAREER SERVICES

Building Blocks for Your Career

We support you in all phases of your career planning: from determining your personal skills profile, to job hunting, to starting your career – and beyond: As an Alumni of TUM you can still benefit from our career services. The TUM Career Service offers professional advice and support – free of charge and conveniently online!

Make use of the Alumni & Career offers: www.community.tum.de/en/career-service

Digital Career Day

The TUM Career Days will give you the opportunity to learn about a wide range of topics related to job applications, career planning and entry. For the first time ever, the Career Day will take place digitally this winter semester.

DATE

Tue. 08.12.2020, all day

INFORMATION

www.community.tum.de/career-service/#career-days



PRESENTATION WITH PERSONAL ACCOUNT (IN GERMAN)

Global Minds

Would you like to go abroad (again): as part of your studies, right after or with work? There are always opportunities to work abroad short or long-term. In cooperation with the TUM Language Center the event series “Global Minds” will discuss important things to pay attention to and questions that might come up. Each date focusses on a specific country or culture – this winter term it will be the USA / UK, Russia and Portugal – with its specific framework, the corresponding application process and intercultural challenges.

DATES

USA/UK: Fri. 04.12.2020, 11.30 am – 1 pm
Russia: Mon. 18.01.2021, 09.45 am – 11.15 am
Portugal : Thur. 21.01.2021, 6.30 pm – 8 pm

PLACE

Online

REGISTRATION/INFO

www.community.tum.de/veranstaltungen

ADVICE FROM COLLEAGUES (IN GERMAN)

Adventure Management

People in leadership positions have a lot of questions, too! A group of managers has formed amongst the TUM Alumni, which regularly meets up to exchange ideas and information – still online in the upcoming semester. Whether you want to talk about managing staff or new challenges you are facing in your everyday work-life: the members share their issues with each other and benefit from talking to like-minded people, their experience and ideas. Inexperienced people who have only recently taken on a management position are welcome, as well. Come and join!

DATES

Thur. 12.11.2020, Thur. 10.12.2020, Thur. 14.01.2021, Thur 18.03.2021 6.15 pm – 8 pm

PLACE

Online

REGISTRATION/INFO

www.community.tum.de/veranstaltungen

Career Lounge Online

As usual, a Career Lounge is scheduled for the evening of the Career Day. This one will be online and on the subject of "Job Opportunities in the Patent System". Experienced TUM Alumni share their knowledge of and insights on the industry.

DATE

Tue. 08.12.2020, 6 pm – 7.30 pm

REGISTRATION

www.community.tum.de/veranstaltungen

Searching for a Job or Internship

The TUM Job and Internship Exchange contains hundreds of job offers in Germany and around the world. The employers are specifically interested in recruiting TUM Students and Alumni.

INFORMATION

career-service/#career-days

www.tum.de/jobboerse

Adventure: Starting a Career

Young alumni in their first year of professional life have the opportunity to talk to other young professionals here – this semester online. The group provides a safe space to exchange experiences with like-minded people, to address problems and to develop possible solutions.

INFORMATION

www.community.tum.de/veranstaltungen

WEBINAR (IN GERMAN)

XING & LinkedIn for Your Career

The business portals XING and LinkedIn are helpful tools when it comes to your career planning. But how do you use these platforms effectively? How can XING and LinkedIn support your further career development? How do HR professionals and headhunters use these portals in their search for talent, and what is important to keep in mind? In this webinar, you will learn how to effectively use business portals to increase your visibility in a professional context.

DATE

Mon. 21.12.2020

5 pm – 6 pm

PLACE

Online

REGISTRATION/INFO

www.community.tum.de/veranstaltungen

WEBINAR (IN ENGLISH)

Your Personal Career Plan

After some time on the job market, it is essential to reflect on your journey so far and to reconsider whether you are on the right track towards a fulfilling career. Are your priorities being met in your current job? Are you still learning and growing? What can you do if this is not the case? Stay in the same field or company or move on, maybe even go abroad? This webinar will help you reflect on your personal goals and needs and work out strategies that lead to a successful and lasting career.

DATE

Mon. 13.01.2021

6 pm – 7 pm

PLACE

Online

REGISTRATION/INFO

www.community.tum.de/veranstaltungen

WEBINAR (IN GERMAN)

Successful Salary Negotiations

In order to make a positive impact in negotiating your salary, it is essential to prepare thoroughly and to consider your goals, negotiation style and your line of argument. In our webinar we will provide you with information on various potential earnings in different industries and positions and give tips on how to structure a successful salary negotiation.

DATE

Thur. 04.02.2021

5 pm – 6 pm

PLACE

Online

REGISTRATION/INFO

www.community.tum.de/veranstaltungen

A SUCCESSFUL DOCTORATE

A NEW CHAPTER

Software for Stargazing

TUM Alumni Dr. Jochen Haucke has studied Mathematics and Informatics at TUM and completed his doctorate in Mathematics in 1992. Subsequently, he found employment in the telecommunications industry, where he started as a software developer and managed smaller projects from 1996 onwards. He then assumed various management tasks on an ever-increasing scale, most recently for 80 employees spread across six locations in four countries. At the same time, he had overall responsibility for the LTE development project with approximately 2,000 employees.

In 2013 – some 20 years after his doctorate – he decided to open a new chapter: Since then, he has been heading the department responsible for software development for telescopes and instruments, as well as for control engineering at the European Observatory in Garching.

In the winter semester, Dr. Jochen Haucke talks about his career in the webinar “Leadership skills for Doctorates and Postcos” (see box below) on January 19th and gives young alumni tips for their first management role.



WEBINAR (IN GERMAN AND ENGLISH)

Leadership Skills for Doctorates and Postdocs

Those who take up a job after their doctorate usually find themselves in their first management position very soon. This is a completely new challenge for which one should be well prepared. In this webinar, alumni with a doctorate and many years of management experience will talk about how they mastered their first leadership role and share which resources are useful for those at the beginning of their careers.

DATES

Wed. 02.12.2020, 5 pm – 6 pm

Tue. 19.01.2020 (in English), 6 pm – 7 pm

Tue. 02.02.2021, 6 pm – 7pm

PLACE

Online

REGISTRATION/INFO

www.community.tum.de/veranstaltungen

DOCTORATE STUDENTS AT TUM BENEFIT FROM A FIRST-CLASS RESEARCH ENVIRONMENT: EXCITING RESEARCH PROJECTS IN STEP WITH THE TIMES, THE OPPORTUNITY TO COLLABORATE WITH RENOWNED RESEARCHERS FROM ALL OVER THE WORLD AND THE SUPPORT OF THE TUM GRADUATE SCHOOL ENSURE A HIGH STANDARD IN SCIENTIFIC EDUCATION.

After their doctorate, about half of the young scientists work in industry, often with staff responsibility. In many cases, TUM doctorates are in demand in industry precisely because they have already carried out applied research or worked with the industry during their doctorate. TUM Alumni & Career supports doctoral students on this path with tailor-made events and contacts to experienced alumni.

WEBINAR (IN GERMAN AND ENGLISH)

Convincing CVs

Rarely do the career paths of doctorate students and postdocs fit into standard CV templates. Doctorate, research work – all this needs to be included in a concise manner on a few pages. In this webinar you will learn how to convincingly present your extra skills and experience. The webinar is available in German and English.

DATES

Thur. 05.11.2020 (in English) , 9.00 am – 11 am
Wed. 13.01.2020, 10 am – 11 am

PLACE

Online

REGISTRATION

www.community.tum.de/veranstaltungen

WEBINAR (IN GERMAN)

The Industry-Based Doctorate

Working in the industry and doing a doctorate at the same time: this is possible in the framework of an industry-based doctorate and those who have done it are highly sought-after from employers. At the same time, doctorate students who work in the corporate world oftentimes have a substantially more intense workload and less contact with professors and co-researchers. In this interactive webinar TUM Alumni will share their own experiences and answer your questions.

DATES

Wed. 25.11.2020, 10 am – 11 am
Wed. 10.02.2021, 1 pm – 2 pm

PLACE

Online

REGISTRATION/INFO

www.community.tum.de/veranstaltungen

WEBINAR (IN GERMAN AND ENGLISH)

Efficient Job Hunting for Doctorates and Postdocs

Finding an industry job after having completed a doctorate can be challenging – especially for candidates with an interdisciplinary background. This webinar will provide you with valuable advice on how to go about finding possible careers, labor markets and companies. We will also look at how to use keywords effectively for job hunting. The webinar is available in both English and German.

DATES

Wed. 18.11.2020 (in English)
Wed. 27.01.2020
10 am – 11 am

PLACE

Online

REGISTRATION

www.community.tum.de/veranstaltungen

Bernhard Bahne (Diploma Surveying and Mapping 1994) has been the new Chief Information Officer at ADAC since April 2020. In this position, he is responsible for the technical design and further development of the entire IT system of the ADAC Group as well as the management of ADAC IT Service GmbH. Prior to this, he held various management positions in the Telefonica Group for 17 years. ■ **Dr. Anna-Theresa Bauer (Doctorate Medicine 2018)** of the Clinic for Plastic Surgery of TUM's University Hospital rechts der Isar has won the "Voice of Europe" Award (Ulrich Hinderer Prize) for Plastic and Aesthetic Surgery in Belgium. It is endowed with 2,000 euros. ■ **Tobias Becher (Diploma Brewing and Beverage Technology 2001)** is the new Head of Technology, Research and Development at Ziemann Holvrieka. He joined the company in 2005 as an expert in Process Engineering and Brewing Technology. ■ **Prof. Dr. Florian Bieberbach (Diploma Informatics 1997, Doctorate 2001)** was unanimously re-elected for another two years as President of the European Federation of Local Energy Companies. He is Chairman of the Management Board of Stadtwerke München and a member of the Energy Industry Steering Committee of the German Association of Local Utilities. ■ In January 2020, **Prof. Dr. Klaus Bogenberger (Diploma Civil Engineering 1996, Doctorate 2001)** was appointed Professor at the Chair of Traffic Engineering and Control at TUM's Department of Civil, Geo and Environmental Engineering. He was most recently Professor of Traffic Engineering at the Universität der Bundeswehr. ■ **Dr. Asim Farooq (Master Transportation Engineering 2015)** has been professor in the Department of Civil Engineering at the CECOS University of IT and Emerging Sciences in Pakistan since July 2019. ■ **Thomas Fenzl (Diploma Sports Sciences 2007)** is the new Managing Director of Congress-Center Böblingen Sindelfingen since October 2020. Prior to this, he was part of the Management Board of live.in.Ravensburg Veranstaltungsgesellschaft mbH, where he was responsible for Marketing and Business Development. ■ **Robert Finke (Master Information Systems 2017)** is acting as product owner at the interface between business and IT at AZ Digital Health, a start-up of the Allianz Group. ■ The Bremen Mercedes plant has a new boss: In April 2020, **Michael Frieß (Diploma Mechanical Engineering 1992)** took over the executive position. He has been with the company since 1995 and was most recently responsible for production planning for the S-, E- and C-Class of the plant. ■ **Maximilian Hagn (Bachelor Agricultural Sciences 2017, Master 2019)** is the new Water Protection Consultant at the Pfaffenhofen Office for Food, Agriculture and Forestry. ■ **Michael Hardi (Diploma Architecture 2001)** has been Head of the Department of Urban Planning at the City of Munich since March 2020. Most recently, he spent four years as head of the construction department at the municipal housing association GEWOFA. ■ **Josef Holzmann (Diploma Surveying and Mapping 1986)** is the new Director of the Office for Rural Development Upper Bavaria since September 2020. He has been working there since 2015 and was previously Head of the Central Services Department and Deputy Head of Office. ■ Head of Agriculture **Konrad Hörl (Diploma Agricultural Sciences 1992)** will be the new Head of the Augsburg Office for Food, Agriculture and Forestry. Since 2012 he was leading the Department of Agriculture and held the position of Deputy Head of Local Authorities. ■ Since September 2020, **Dr. Stefan Kreis (Diploma Brewing and Beverage Technology 1997, Doctorate 2003)** has been responsible for the Departments of Technology, Logistics, Human Resources and Purchasing at Erdinger Weißbräu. He was the company's Head of Quality Management, Research and Development since 2015. ■ The Executive Committee of Deutscher Brauer-Bund [German Brewers' Association] unanimously confirmed **Dr. Jörg Lehmann (Diploma Brewing and Beverage Technology 1994, Doctorate 1997)** as President for another three years. Since September 2018 he has been Chairman of the Board of Management of Paulaner Brauereigruppe in Munich. ■ **Benjamin Lorenz (Bachelor Forest Science and Resource Management 2020)** is the new office manager at the Programme for the Endorsement of Forest Certification Schemes (PEFC) and also the contact person for PEFC-Forest and Chain-of-Custody certification. ■ **Andreas Maier (Diploma Agricultural Sciences 1987)** was appointed President of the Regional Office for Viticulture and Horticulture in Veitshöchheim. Since December 2018 he is heading the division Food and Agriculture at the Government of Lower Franconia. ■ Since the beginning of June 2020, **Philip Mrosk (Bachelor Civil Engineering 2016, Master 2019)** has been a Senior Consultant at the Munich office of Capital Markets Germany of international real estate consultancy Cushman & Wakefield. Prior to that, he was Senior Consultant Retail Investment at JLL for one and a half years. ■ The Institute of Agricultural Engineering and Animal Husbandry of the Bavarian State Institute of Agriculture has a new director since June 2020: **Dr. Stefan Naser (Diploma Agricultural Sciences 1995, Doctorate 2001)**. Previously, the scientist was the institute's coordinator of the section "Environmental Technology in Land Use". ■ **Volker Nilles (Doctorate Economics 2001)** has been head of the "Neumaschinen" division at KraussMaffei since August 2020. He has been with the company since the beginning of 2020 and was CEO of construction machinery manufacturer Kleemann for nine years. ■ **Dr. Gerhard Nowak (Diploma Mechanical Engineering 1996, Doctorate 2001)** has become a partner at Bain & Company in Munich. He has more than 20 years of experience in consulting and business, having previously worked for Quartz Nordics, which was merged with the consulting firm Bain. ■ Since July 2020, **Dr. Axel Pichlmaier (Diploma Physics 1995, Doctorate 1999)** is the new Technical Director of the research reactor in Garching. The physicist has a background in neutron research as well as in reactor operation and nuclear supervision. ■ **Prof. Dr. Arnd Poetzsch-Heffter (Diploma Informatics 1986, Doctorate 1991)** is President of TU Kaiserslautern since July 2020. He had previously been Vice President for Research and Technology since 2014 and held a professorship for Software Engineering. ■ Since April 2020, **Dr. Rainer Reschmeier (Diploma Energy and Process Engineering 2010)** has been the new head of Stadtwerke Abensberg. Before that, he was project developer at Gammel Engineering in Abensberg and project manager of the EI&C projects at Xervon Instandhaltung. ■ Since the beginning of September

2020, **Stefan Scheckinger (Diploma Civil Engineering 1996)** has been the Director of the State Building Authority in Weilheim and the Road Construction Division. Before that he was Head of Road Construction in Augsburg. ■ Since October 1st, 2020, **Jonas Seidl (Diploma Brewing and Beverage Technology 2010)** has been reinforcing the management team at Giesinger Bräu, where he will primarily be responsible for Finance and Sales. Previously he was managing partner at Kondrauer Mineral- und Heilbrunnen GmbH & Co.KG. ■ **Dominik Siegler (State Examination Health and Health Care Science 2005)** has been Deputy Director of the Health Department Landau-Südliche Weinstraße since summer 2020. He previously worked as an assistant physician in the Department of Internal Medicine and as an assistant physician in the Department of Child and Adolescent Psychiatry and Psychotherapy. ■ **Dr. Willie Stiehler (Master Renewable Resources 2010, Doctorate Economics 2015)** has been the new Managing Director of the Energy Agency Ebersberg-Munich since August 2020. Previously, he was the Managing Director of the Energy Agency Southeast Bavaria since 2016. ■ **Martin Weber (Bachelor Forest Science and Resource Management 2008)** is the new editor-in-chief of Deutscher Landwirtschaftsverlag's hunting magazine Pirsch. Additionally he has been responsible for the care and further development of the magazine Bergjagd since 2017. ■ **Lothar Winkler (Diploma Surveying and Mapping 1989)** is the new Head of the Office for Rural Development Upper Franconia in Bamberg. He had previously been Deputy to the Head of the Office since 2012.

TUM's Circle of Friends Commitment With Dedication

www.bund-der-freunde.tum.de

Every year, **Bund der Freunde der TUM** honors outstanding dissertations and postdoctoral theses at TUM.

In 2019 the sponsorship award, each worth 1,500 euros, was presented to:

■ **Dr. Alexander Buttler (Diploma Mechanical Engineering 2012, Doctorate 2018):** Techno-economic Evaluation of Polygeneration Plants and Power-to-x Storage Systems in a Sustainable Energy System ■ **Dr. Matthias Kerler (Diploma Automotive Engineering 2012, Doctorate 2019):** A Method for Determining the Optimal Battery Cell Size for Electric Vehicles ■ **PD Dr. phil. habil. Jutta Möhringer (Habilitation 2018):** Program for Gifted Students in Secondary School – the Model TUMKolleg ■ **PD Dr. habil. Daniel Müller-Gritschneider (Diploma Electrical and Computer Engineering 2003, Doctorate 2009, Habilitation 2019):** Advanced Virtual Prototyping and Communication Synthesis for Integrated System Design at Electronic System Level ■ **Prof. Dr. habil. Philipp Neumann (Doctorate Informatics 2013, Habilitation 2019):** Algorithms and HPC Software for Molecular-Continuum Flow Simulation ■ **Dr. Johann Emmeram Riemensberger (Diploma Physics 2011, Doctorate 2018):** Time-Frequency-Resolved Absolute Time Delay of the Photoelectric Effect ■ **PD Dr. habil. Désirée Schauz (Habilitation 2019):** From General Usefulness to a Promise of Technical Progress. The Changing Scientific Understanding of Science (17th – 20th century) ■ **Dr. Daniel Zolg (Bachelor Biology 2011, Master 2014, Doctorate 2019):** Building Proteome Tools Based on a Complete Synthetic Human Proteome

“We have the common goal of tackling the challenges facing society with innovations. Join our circle of friends, support your university”.

Thomas F. Hofmann
TUM President



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ENGLISH TRANSLATION

Lilli Hantke

PHOTOS AND GRAPHIC ART

- 1 Istockphoto.com/PhonlamaiPhoto (title)
- 2 Istockphoto.com/ TARIK KIZILKAYA (mobile phone)
- 3 Magdalena Jooß/TUM (Schmöller/Eisele),
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Pursuant to Article 3 (2) of Germany's Basic Law, men and women have
equal rights. All persons and descriptions of functions in KontakTUM refer
in equal measure to men and women. The use of the masculine form alone
in some places only serves the text's readability.

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Successful Together

Making the right decisions, setting the course for the future – both in your professional and private life. At TUM Mentoring, TUM Alumni support their mentees with their questions and share valuable experiences as sparring partners.

www.community.tum.de/en/mentoring



TUM Alumna Katrin Kredel (Diploma Architecture 1988) advises her mentees to concentrate on what machines cannot do, both during their studies and at work: teamwork, empathy, human-centered and solution-oriented cooperation. Since 2013, she has been a mentor in the TUM Mentoring Program for Students by Alumni, especially for international students. She has built up a multicultural and international mentee group, which she has been mentoring for years.

Continue reading at www.150.alumni.tum.de/en/katrin-kredel-en

10 Years TUM University Foundation

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