



Media Information
9 August 2018

BMW Summer School 2018: Focus on “Intelligent Cars on Digital Roads”.

Raitenhaslach/Munich. During the interdisciplinary programme of the BMW Summer School 2018, 34 international PhD students, research peers and industry experts shared their visions and discussed current advances and challenges in the field of Emotion-Aware Vehicle Assistants (EVA).

The BMW Summer School 2018 was jointly set up in cooperation with the Franco-German University (UFA), EURECOM, Technical University of Munich (TUM) and BayFrance under the umbrella of the German French Academy for the Industry of the Future by TUM and the IMT (Institut Mines-Télécom). To mark the 150th anniversary of the TUM, the BMW Summer School was held at the TUM Science & Study Centre Raitenhaslach from 29 July to 3 August 2018. Applicants were invited to submit their research in relevant fields, such as user centric interaction design, in-vehicle sensate environments, cognitive models, data analytics for emotion-aware systems, psychology of passengers in autonomous vehicles, human mind and ethics of emotion-aware systems by 15 May 2018.

Mobility currently dominated by a number of powerful trends.

Advances in artificial intelligence and machine learning are essential for autonomous driving and the rise of fully-connected vehicles as they merge with the Internet of Things. A broad spectrum of smart services for organising personal mobility and providing features that reach well beyond the car are being developed and handled for customers by emerging Intelligent Personal Assistants. The participants in this year's BMW Summer School had the opportunity to listen, share and learn about research topics and current frontiers in machine intelligence.

Summer School fosters interaction between academic and industry research in three main programme tracks.

In the **keynote track**, guest speakers such as Alexander Zadorojnyi from the IBM Research Lab Haifa and Mohammed Ezz from Affectiva shared and discussed their ideas with participants. In breakout sessions, small student groups discussed

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topics like machine learning methods in autonomous cars and intelligent mobility services together with research peers and industry experts.

In the **poster track**, the PhD students presented their own research to the interdisciplinary audience. “While all presentations were great, in this year’s competition on the best research poster, Francesco Walker from University of Twente convinced our scientific committee with his research idea and to-the-point presentation on the benefits of extended peripersonal space during automated driving,” said Dr. Hans-Jörg Vögel, responsible for research into Artificial Intelligence and Cognitive Services at the BMW Group.

The **“Lean Startup Machine”**, the programme’s third track, gave the young researchers the opportunity to develop innovative new ideas in mixed groups of five using agile start-up working methods such as design thinking. Afterwards, the groups presented their ideas to the audience in a competitive pitching format. “The Lean Startup Machine is a real boot camp for innovative ideas. The winning team showed exceptional teamwork and understanding of design and lean thinking methods in their approach envisioning a modular mobility concept for urban areas,” said Esa Nettamo from the Digitalist Group, which provided the BMW Summer School with intensive support in preparing the Lean Startup Machine track this year.

In addition to the three main programme tracks, the students used the informal atmosphere at evening events with Prof. Jörg Ott from TU Munich, Prof. Jacques Terken from TU Eindhoven and Kai Demtröder, Vice President BMW Group IT for Connected Car, Digital Backend, Big Data and Blockchain to gain insights into both academic and industry career opportunities.

“Once again, we experienced a very creative, collaborative and inspiring atmosphere. One reason is certainly the interdisciplinary and international group of participants that makes the Summer School such a great forum for discussion of digital technologies and the mobility of the future,” said Prof. Ulrich Finger, director of EURECOM. 34 PhD students from 18 different countries across Asia,

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Africa, North and South America, as well as Europe, with educational backgrounds ranging from Computer Science to Mechanical, Electrical, Computer Engineering and Mathematics, participated this year. In total, there were 60 participants, including guest speakers and coaches. 50 percent of the participating students received travel-support grants, taking into account equal opportunities, underrepresented regions and academic excellence.

The 2019 BMW Summer School is scheduled to take place from 14 to 19 July 2019 and will deal with societal and economic benefits of Big Data and AI overall, and for urban mobility in particular. Carlo Ratti, director of MIT Senseable City Lab and founder of CRA design and innovation office (Turin and New York), is planning to support the event together with his team: “The interdisciplinary concept allows to take a multi-faceted approach to discuss data-driven solutions for urban mobility and educate the innovators of the future. We are looking forward to an exciting week next year.”

Link to the BMW Summer School: <http://summerschool.bmw>

Link to the highlight video: <https://youtu.be/qH42CSuuJ4U>

Speakers at the BMW Summer School 2018.

Industry:

Tim Paganos, Microshare

Ron Rock, W3C Automotive Data Consortium

Charles Paumelle, LoRa Alliance “Automotive Data”

Florian Eyben, audEERING

Holger Rapp, Lyft

Mohammed Ezz, Affectiva

Alexander Zadorojniy, IBM Research Lab Haifa

Kai Demtröder, Vice President BMW Group IT for Connected Car, Digital Backend, Big Data and Blockchain

Jane Vita, Digitalist Group

Loren Schwarz, BMW Group Methods Agile Development, Artificial Intelligence

Michal Kümmel, BMW Group Intelligent Mobility Services

Thomas Hubregtsen, BMW Group Research E/E Software Technologies

Academic:

Mohsen Kaboli, TUM

David Gesbert, EURECOM

Patrick Duvaut, IMT

Prof. Björn Schuller, University of Augsburg

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Prof. Jacques Terken, TU Eindhoven
Prof. Elisabeth André, University of Augsburg
Prof. Peter Robinson & Quentin Stafford-Fraser, Cambridge University
Dr. Ann Morrison, University of Southern Queensland
Susanne Müller, Munich School of Philosophy
Wolfgang Wörndl, TUM
Muriel Lang, TUM

Committee of the BMW Summer School 2018.

Scientific Chairs:

Prof. Ulrich Finger, Director of [EURECOM](#)
Prof. Andreas Herkersdorf, Head of the Chair for Integrated Systems, [TUM](#)
Martin Arend, Head of E/E Architecture and Technologies, BMW Group

Scientific Programme Committee:

Prof. Elisabeth André (UNA)
Asaf Adi (IBM)
Prof. Klaus Bengler (TUM)
Prof. Jonas Beskow (KTH)
Prof. Jörg Conradt (TUM)
Kynan Eng (iniVation)
Florian Eyben (audEERING)
Prof. Jérôme Haerri (EURECOM)
Prof. Benoit Huet (EURECOM)
Ann Morrison (USQ)
Samer Al Moubayed (Furhat Robotics)
Prof. Jörg Ott (TUM)
Hannemor Keidel (TUM)
Prof. Björn Schuller (UNA)
Dr. Loren Schwarz, BMW Group
Dr. Reinhard Stolle, BMW Group, Vice President Methods Agile Development, Artificial Intelligence
Prof. Jacques Terken (TU Eindhoven)
Prof. Raphaël Troncy (Eurecom)
Dr. Hans-Jörg Vögel, BMW Group Research, New Technologies, Innovations

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With its four brands BMW, MINI, Rolls-Royce and BMW Motorrad, the BMW Group is the world's leading premium manufacturer of automobiles and motorcycles and also provides premium financial and mobility services. The BMW Group production network comprises 30 production and assembly facilities in 14 countries; the company has a global sales network in more than 140 countries.

In 2017, the BMW Group sold over 2,463,500 passenger vehicles and more than 164,000 motorcycles worldwide. The profit before tax in the financial year 2017 was € 10.655 billion on revenues amounting to € 98.678 billion. As of 31 December 2017, the BMW Group had a workforce of 129,932 employees.

The success of the BMW Group has always been based on long-term thinking and responsible action. The company has therefore established ecological and social sustainability throughout the value chain, comprehensive product responsibility and a clear commitment to conserving resources as an integral part of its strategy.

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