Program

Moderator: Susan Kish, CEO, Andesa

14.00 **Welcome and Introduction**
Susan Kish

14.10 **Teaching robots to see**
Margarita Chli, Vision for Robotics Lab,
ETH Zürich

14.25 **Spatial Computing: Towards a Co-Processor to the Human Brain**
Alexander Ilic, Magic Leap

14.40 **Interview** with **Markus Gross**, Computer
Graphics Laboratory, ETH Zürich and
Disney Research Zürich

14.55 **Conversation** with **Margarita Chli**,
Alexander Ilic, and **Markus Gross**

15.15 Break

15.45 **Machine perception for VR**
Alexander Sorkine-Hornung, Oculus

16.05 **Creating visual technologies in-silico
inspired by what is found in-vivo**
Yulia Sandamirskaya and **Julien Martel**,
Institute of Neuroinformatics, ETH Zürich
and University of Zürich

16.25 **Applications and recent advances of deep
learning for robot navigation**
Isaac Deutsch and **David Hoeller**, Nvidia

16.45 **Talk** (tbd)
Marc Pollefeys, Computer Vision and
Geometry Group, ETH Zürich

16.55 **Q&A and Closing**

17.00 **Networking Reception**

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Vision in an AI World

Friday, 14 September 2018

14.00 h bis 17.00 h
Schiffbau
Schiffbaustrasse 4, 8005 Zürich

Presented by ETH Zurich

Challenge the way you perceive the world. Computer scientists and entrepreneurs working with artificial intelligence reveal how they adapt visual perception to enable robots and intelligent systems to see and interpret the environment.

Speakers will reveal how sensory perception allows robotic devices to operate at high speeds and with a fraction of the power consumption of a conventional camera. They will also demonstrate multiple scene perception algorithms based in Computer Vision techniques and their applications.

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Speakers

Susan Kish is a senior executive with extensive experience in building successful businesses, products, services and teams. She has worked across multiple global industries e.g. financial services, media and clean energy and is a relentless advocate of digital and data literacy. A seasoned entrepreneur, Susan has been successful in bringing new ideas and businesses to life inside large corporations and banks as well as in start-up environments. She is a trustee and independent director on several boards.

Margarita Chli is a Professor at ETH Zurich leading the Vision for Robotics Lab at ETH Zurich. Originally from Greece and Cyprus, she studied Information & Computing Engineering at the University of Cambridge and has conducted her PhD at Imperial College London, UK. Margarita's interests lie in Computer Vision for Robotics and her work contributed to the first vision-based autonomous flight of a small helicopter. In 2016, she featured in Robohub's list of 25 women in Robotics you need to know aboutand in 2017, she received the biannual Zonta prize on the basis of her high impact contributions to the development of robotic vision and was a speaker at the World Economic Forum in Davos.

Alexander Ilic is the head of Magic Leap Switzerland and an experienced high-tech entrepreneur. He co-founded the ETH Spin-off Dacuda (acquired by Magic Leap in 2017) and served as Assistant Professor at University of St.Gallen. In 2011, he won the Swiss Economic Award and was named "Entrepreneur of the Year" in 2012 by E&Y.

Markus Gross is a Professor of Computer Science at ETH Zurich and VP of Global Research and Development, Disney Research Zurich. His research interests include: computer animation, immersive displays, and video technology. In 2013, he received a Technical Achievement Award from the Academy of Motion Picture Arts and Sciences. Gross has also cofounded several companies including: Cyfex, Perceptiko, and Propulsion Academy AG.

Alexander Sorkine-Hornung is Research Scientist and Technical Lead for Mixed Reality at Oculus Zurich. With the teams in Zurich, he focuses on developing core technologies that bridge the boundaries between the Real and Virtual World, ranging from 3D computer vision and machine learning for environment understanding to high performance graphics and experience design. Before his time at Oculus, Alexander headed the Imaging and Video group at Disney Research. The research and technologies developed by his group have significantly impacted Disney park attractions and movie productions. He obtained his PhD in Computer Science at RWTH Aachen in 2008, and spent one year as a postdoctoral researcher at the Computer Graphics Laboratory at ETH Zurich. In 2012 Alexander received the Eurographics Young Researcher Award.

Yulia Sandamirskaya and Julien Martel are both with the Institute of Neuroinformatics (INI), a research institution at the University of Zurich and ETH Zurich. Yulia is leading the group «Neuromorphic Cognitive Robots» that builds biologically inspired computing architectures for robots using spiking and continuous neuronal dynamics, neuromorphic hardware, and event-based sensors. She develops neuronal architectures that can perceive, learn, and act autonomously, inspired by biological cognition. Julien is a graduate student at INI, his research interests lie in artificial vision with the aim to give machines the ability to see and understand what they see. Julien is interested in the design of algorithms and systems with novel, unconventional vision sensors. In particular, he has devoted his efforts to create algorithms for sensors that embed intelligent circuits in each pixel and is collaborating with chip designers to drive the design of the next generation of intelligent vision chips.

Isaac Deutsch and David Hoeller both work in deep learning and robotics at NVIDIA Zurich. Isaac studied Mechanical Engineering at ETH Zurich, before focusing on robotics. For the Bachelor and Master theses, Isaac stayed in Hong Kong and Los Angeles, respectively. He joined Zurich-based startup Nomoko as one of the first employees, working on 3D reconstruction from very high-resolution images, before coming to NVIDIA. David also studied Mechanical Engineering at ETH Zurich where he focused mainly on robotics, systems and control. As part of his studies, he developed algorithms for satellite guidance and navigation at Airbus. In 2017, he started a PhD at the Robotics Systems Lab at ETH Zurich in conjunction with NVIDIA.

Marc Pollefeys is Full Professor in Computer Science at the Institute for Computational Science at ETH Zurich since August 2007. He currently also remains associated with the Dept. of Computer Science of the University of North Carolina at Chapel Hill where he started as an assistant professor in 2002 and became an associate professor in 2005. One of his main research goals is to develop flexible approaches to capture visual representations of real world objects, scenes and events. Dr. Pollefeys has received several prizes for his research, including a Marr prize, an NSF CAREER award and a Packard Fellowship.