

Workshop I: Individual Vehicle Autonomy: Perception and Control

Monday October 5, 2020

- 7:55 *SESSION CHAIR: RICHARD SOWERS (University of Illinois at Urbana-Champaign)*
- 7:55–8:00 *Welcome & Opening Remarks: Dean Miguel García-Garibay (Dean of Physical Sciences, UCLA) and Dima Shlyakhtenko (Director, IPAM)*
- 8:00–8:40 **Adrien Gaidon** (Toyota Research Institute)
The 3 R's and P's of Autonomous Driving: Robustness, Randomness, and Risk in Perception, Prediction, and Planning
- 8:50–9:00 *Break*
- 9:00–9:40 **Jana Kosecka** (George Mason University)
Challenges and Opportunities in Autonomous Navigation
- 9:50–10:00 *Break*
- 10:00–10:20 *Lightning Poster Presentations by Xiaoyi (Sherry) Chen (Univ. of Pennsylvania), Kuang Huang (Columbia Univ.), and Hossein Nick Zinat Matin (Univ. of Illinois at Urbana-Champaign)*
- 10:20–10:30 *Break*
- 10:30–11:10 **Adam Oberman** (McGill University)
Contributions to deep learning using a mathematical approach: improved model uncertainty, certified robust models, and faster training of Neural ODEs.

Tuesday October 6, 2020

- 8:00 *SESSION CHAIR: DARIUS BURSCHKA (Technische Universität München)*
- 8:00–8:40 **Oscar Beijbom** (Motional)
Data, detection, and metrics for autonomous vehicles
- 8:50–9:00 *Break*
- 9:00–9:40 **Stefano Soatto** (University of California, Los Angeles (UCLA))
Robustness in Perception for Control and Planning
- 9:50–10:00 *Break*
- 10:00–10:40 **Pratik Chaudhari** (University of Pennsylvania)
Learning with Few Labeled Data
- 10:50–11:00 *Break*

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11:00–11:40 **Bo Li** (University of Illinois at Urbana-Champaign)
Secure Learning in Adversarial Environments

Wednesday October 7, 2020

8:00 *SESSION CHAIR: LAWRENCE UDEIGWE (Manhattan College)*

8:00–8:40 **Wolfram Burgard** (Toyota Research Institute)
(Self-)Supervised Learning for Perception Tasks in Automated Driving

8:50–9:00 *Break*

9:00–9:40 **Richard Tsai** (University of Texas at Austin)
Line-of-sight optimization for moving agents in complex urban domains

9:50–10:00 *Break*

10:00–10:40 **Darius Burschka** (Technical University Munich (TUM))
Visual Modeling and Collision Avoidance in Dynamic Environments from Monocular Video Sequences

10:50–11:00 *Break*

11:00–11:40 **David Held** (Carnegie Mellon University)
Self-supervised learning for autonomous driving

Thursday October 8, 2020

8:00 *SESSION CHAIR: JIA LE XIAN (Lizora Technologies)*

8:00–8:40 **Xuan Di** (Columbia University)
Harnessing Mean-Field Game & Data Science for Mixed Autonomy

8:50–9:00 *Break*

9:00–9:40 **Dorsa Sadigh** (Stanford University)
Interaction-Aware Planning: A Human-Centered Approach toward Autonomous Driving

9:50–10:00 *Break*

10:00–10:40 **Vlad Voroninski** (Helm AI)
Deep Teaching: A Scalable AI Approach to Autonomous Driving

10:50–11:00 *Break*

11:00–11:40 **Raquel Urtasun** (University of Toronto, Uber)
A future with affordable Self-driving vehicles

Friday October 9, 2020

- 8:00 *SESSION CHAIR: JANA KOSECKA (George Mason University)*
- 8:00–8:40 **Dragomir Anguelov** (Waymo)
Deep Temporal Scene Understanding for Autonomous Driving
- 8:50–9:00 *Break*
- 9:00–9:40 **Shai Avidan** (Tel Aviv University)
SampleNet: Differentiable Point Cloud Sampling
- 9:50–10:00 *Break*
- 10:00–10:40 **Alexandre Alahi** (École Polytechnique Fédérale de Lausanne (EPFL))
Socially-aware AI for Vehicle Autonomy
- 10:50–11:00 *Break*
- 11:00–11:40 **Matthew Johnson-Roberson** (University of Michigan)
Alternatives in robotic perception for self-driving cars: what can academics add to a robust industrial research area?

