

Mathematical Challenges and Opportunities for Autonomous Vehicles Tutorials

Tuesday September 15, 2020

- 8:00 *Session Chair Benjamin Seibold*
- 9:45–9:50 *Welcome & Opening Remarks: Dean Miguel García-Garibay (Dean of Physical Sciences, UCLA) and Dima Shlyakhtenko (Director, IPAM)*
- 9:45–11:00 **Frank Noe** (Freie Universität Berlin)
Fundamentals of Artificial Intelligence and Machine Learning, Part 1

Wednesday September 16, 2020

- 8:00 *Session Chair Joan Walker*
- 8:00–9:15 **Benjamin Seibold** (Temple University)
Basic Traffic Models and Traffic Waves, Part 1
- 9:25–9:45 *Break*
- 9:45–11:00 **Daniel Work** (Vanderbilt University)
Transportation Engineering for Connected and Automated Vehicles, Part 1

Thursday September 17, 2020

- 8:00 *Session Chair M. Grazia Speranza*
- 8:00–9:15 **Benjamin Seibold** (Temple University)
Basic Traffic Models and Traffic Waves, Part 2
- 9:25–9:45 *Break*
- 9:45–11:00 **Frank Noe** (Freie Universität Berlin)
Fundamentals of Artificial Intelligence and Machine Learning, Part 2

Friday September 18, 2020

- 8:00 *Session Chair Daniel Work*
- 8:00–9:15 **Jonathan Sprinkle** (University of Arizona)
Cyber-Physical Systems Challenges: Vehicle Automation and Data Acquisition, Part 1
- 9:25–9:45 *Break*

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9:45–11:00 **Bryant Walker Smith** (University of South Carolina)
Legal Aspects of Autonomous Driving

Monday September 21, 2020

8:00 *Session Chair Richard Sowers*

8:00–9:15 **Jonathan Sprinkle** (University of Arizona)
Cyber-Physical Systems Challenges: Vehicle Automation and Data Acquisition, Part 2

9:25–9:45 *Break*

9:45–11:00 **Daniel Work** (Vanderbilt University)
Transportation Engineering for Connected and Automated Vehicles, Part 2

Tuesday September 22, 2020

8:00 *Session Chair Hani Mahmassani*

8:00–9:15 **M. Grazia Speranza** (Università di Brescia)
Fundamentals of optimization, Part 1

9:25–9:45 *Break*

9:45–11:00 **Katherine Driggs-Campbell** (University of Illinois at Urbana-Champaign)
Human Factors, Part 1

Wednesday September 23, 2020

8:00 *Session Chair Samitha Samaranayake*

8:00–9:15 **M. Grazia Speranza** (Università di Brescia)
Fundamentals of optimization, Part 2

9:25–9:45 *Break*

9:45–11:00 **Jana Kosecka** (George Mason University)
Perception and Learning for Autonomous Driving, Part 1

Thursday September 24, 2020

- 8:00 *Session Chair Jonathan Sprinkle*
- 8:00–9:15 **Jana Kosecka** (George Mason University)
Perception and Learning for Autonomous Driving, Part 2
- 9:25–9:45 *Break*
- 9:45–11:00 **Katherine Driggs-Campbell** (University of Illinois at Urbana-Champaign)
Human Factors, Part 2

Friday September 25, 2020

- 8:00 *Session Chair Monty Abbas*
- 8:00–9:15 **Paola Goatin** (INRIA)
Macroscopic models for Autonomous Vehicles
- 9:25–9:30 *Break*
- 9:30–10:45 **Benedetto Piccoli** (Rutgers University)
Beyond Vehicles and Other Flow Systems

