

Workshop III: Large Scale Autonomy: Connectivity and Mobility Networks

Monday November 16, 2020

- 7:55 *Session Chair: Samitha Samaranyake (Cornell)*
- 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 **Karl Johansson** (Royal Institute of Technology (KTH))
How to control road traffic using automated truck platoons
- 8:50–9:00 *Break*
- 9:00–9:40 **Elisabetta Cherchi** (Newcastle University)
Large scale autonomy on the consumers' side: challenges and opportunities of forecasting the demand for autonomous vehicles
- 9:50–10:00 *Break*
- 10:00–10:40 **Alireza Talebpour** (University of Illinois at Urbana-Champaign)
Towards Better Understanding of Underlying Mechanisms of Human-Automated Vehicle Interactions
- 10:50–11:00 *Break*
- 11:00–11:40 **Joseph Chow** (New York University)
Design of cyberphysical autonomous mobility platforms
- 11:50–12:00 *Lightning Poster Presentations: Matthieu Barreau (KTH); Kuang Huang (Columbia); Liudmila Tumash (Université Grenoble Alpes); Jennifer Weissen (Universität Mannheim)*

Tuesday November 17, 2020

- 8:00 *Session Chair: Monica Menendez (NYU Abu Dhabi)*
- 8:00–8:40 **Carlos Canudas de Wit** (GIPSA Lab)
Modeling and Control of Large-Scale Traffic Urban Networks
- 8:50–9:00 *Break*
- 9:00–9:40 **Maria Laura Delle Monache** (INRIA)
Modeling for mixed autonomy traffic: a control-based approach
- 9:50–10:00 *Break*
- 10:00–10:40 **Alexandre Bayen** (University of California, Berkeley (UC Berkeley))
Lagrangian control at large and local scales in mixed autonomy traffic flow
- 10:50–12:00 *Lunch (on your own)*

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- 12:00 *Session Chair: Raphael Stern (Univ. of Minnesota)*
- 12:00–12:40 **Juliana Freire** (New York University)
Dataset Search and Augmentation
- 12:50–1:00 *Break*
- 1:00–1:40 **M. Grazia Speranza** (Università di Brescia)
Controlling unfairness in traffic networks

Wednesday November 18, 2020

- 8:00 *Session Chair: M. Grazia Speranza (Università di Brescia)*
- 8:00–8:40 **Maria Battarra** (University of Bath)
Routing algorithms for very heterogeneous fleets
- 8:50–9:00 *Break*
- 9:00–9:40 **Ann Campbell** (University of Iowa)
Value of Autonomous Vehicles for Package Delivery
- 9:50–10:00 *Break*
- 10:00–10:40 **David Shmoys** (Cornell University)
Managing a Fleet of Autonomous Vehicles: Lessons Learned from the World of Bike-sharing
- 10:50–12:00 *Lunch (on your own)*
- 12:00–12:40 **Pascal Van Hentenryck** (NICTA)
On-Demand Mobility Systems: Overview and Case Studies
- 12:50–1:00 *Break*
- 1:00–1:40 **Hani Mahmassani** (Northwestern University)
Deployment of Autonomous Fleet Mobility Services at Scale: Modeling Scenarios and Network Impacts

Thursday November 19, 2020

- 8:00 *Session Chair: Paola Goatin (INRIA)*
- 8:00–8:40 **Simone Goettlich** (Universität Mannheim)
On the influence of time delays in vehicular traffic
- 8:50–9:00 *Break*

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- 9:00–9:40 **Monica Menendez** (New York University Abu Dhabi)
Automated modular vehicle technology: from public transportation to emergency medical services
- 9:50–10:00 *Break*
- 10:00–10:40 **Samitha Samaranayake** (Cornell University)
Vehicle routing in transit centric mobility-on-demand systems
- 10:50–12:00 *Lunch (on your own)*
- 12:00 *Session Chair: Jia Le Xian (Lizora Technologies)*
- 12:00–12:40 **Yafeng Yin** (University of Michigan)
Rhythmic Traffic Management and Control in Fully Automated Vehicle Environment
- 12:50–1:00 *Break*
- 1:00–1:40 **Christian Claudel** (University of Texas at Austin)
Data assimilation and optimal control in the context of UAV-based flash flood monitoring

Friday November 20, 2020

- 8:00 *Session Chair: Hani Mahmassani (Northwestern)*
- 8:00–8:40 **Paola Goatin** (INRIA)
A multi-population traffic flow model on networks accounting for vehicle automation
- 8:50–9:00 *Break*
- 9:00–9:40 **Saif Jabari**
Decentralized Network Control Using Continuum Traffic Models
- 9:50–10:00 *Break*
- 10:00–10:40 **Simona Sacone** (Università di Genova)
Hybrid micro-macro modelling for platoon control in freeway traffic networks
- 10:50–11:00 *Break*
- 11:00–11:40 **Michael Hyland** (University of California, Irvine (UCI))
Integrating State-of-the-Art Mobility-on-Demand Fleet Models into Transportation System Simulation Tools for Policy Analysis
- 12:00 *Conclusion*

