

# Jianyu Chen

Date of Birth: April 12, 1992

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## PROFESSION

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**Tsinghua University**

**Beijing, China**

- Assistant Professor in Institute for Interdisciplinary Information Sciences (IIIS) 2020.11 – Present
- Research Areas: reinforcement learning, optimal control, representation learning, robotics, autonomous driving

## EDUCATION

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**UC Berkeley**

**Berkeley, CA, USA**

*PhD, Major: Control, Department of Mechanical Engineering*

2015 – 2020

- Advisor: Professor Masayoshi Tomizuka

**Tsinghua University**

**Beijing, China**

*Bachelor, Mechanical Engineering*

2011 – 2015

**Tsinghua University**

**Beijing, China**

*Bachelor (Second Major), Economic*

2012 – 2015

## EXPERIENCES

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- **UC Berkeley** 2015.8 – 2020.9
  - Graduate Student Researcher
- **Waymo (Google Self-Driving)** 2019.6 – 9
  - Research Intern
- **nuTonomy (Aptiv Mobility)** 2018.5 – 8
  - Research Intern
- **Denso International America** 2017.6 – 7
  - Visiting PhD student

## PUBLICATIONS

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### First-Authored Papers:

- **J. Chen, S. Li, and M. Tomizuka**, “Interpretable End-to-end Urban Autonomous Driving with Latent Deep Reinforcement Learning”, under review, IEEE Transactions on Intelligent Transportation Systems (**T-ITS**). Also presented at Computer Vision and Pattern Recognition (**CVPR**) 2020 Workshop on Scalability in Autonomous Driving and International Conference on Machine Learning (**ICML**) 2020 Workshop on AI for Autonomous Driving.
- **J. Chen, Z. Xu, and M. Tomizuka**, “End-to-end Autonomous Driving Perception with Sequential Latent Representation Learning”, IEEE/RSJ International Conference on Intelligent Robots and Systems (**IROS**), 2020.

- **J. Chen**, B. Yuan, and M. Tomizuka, “Model-free Deep Reinforcement Learning for Urban Autonomous Driving”, IEEE Intelligent Transportation Systems Conference (**ITSC**), 2019.
- **J. Chen**, B. Yuan, and M. Tomizuka, “Deep Imitation Learning for Autonomous Driving in Generic Urban Scenarios with Enhanced Safety”, IEEE/RSJ International Conference on Intelligent Robots and Systems (**IROS**), 2019.
- **J. Chen**, W. Zhan, and M. Tomizuka, “Autonomous Driving Motion Planning with Constrained Iterative LQR”, IEEE Transactions on Intelligent Vehicles (**T-IV**).
- **J. Chen**, C. Tang, L. Xin, and M. Tomizuka, “Continuous Decision Making for Autonomous Driving under Uncertain and Interactive Environments”, IEEE Intelligent Vehicle Symposium (**IV**), 2018.
- **J. Chen**, Z. Wang, and M. Tomizuka, “Deep Hierarchical Reinforcement Learning for Autonomous Driving with Distinct Behaviors”, IEEE Intelligent Vehicle Symposium (**IV**), 2018.
- **J. Chen**, C. Liu, and M. Tomizuka, “FOAD: Fast Optimization-based Autonomous Driving Motion Planner”, American Control Conference (**ACC**), 2018.
- **J. Chen**, W. Zhan, and M. Tomizuka, “Constrained Iterative LQR for On-Road Autonomous Driving Motion Planning”, IEEE Intelligent Transportation Systems Conference (**ITSC**), 2017.

#### Co-Authored Papers:

- Y. Shimizu, W. Zhan, L. Sun, **J. Chen**, S. Kato and M. Tomizuka, “Motion Planning for Autonomous Driving with Extended Constrained Iterative LQR”, ASME Letters in Dynamic Systems and Control, also presented in Dynamic Systems and Control Conference (**DSCC**), 2020.
- L. Xin, Y. Kong, S. Li, **J. Chen**, Y. Guan, M. Tomizuka, and B. Chen, “Enable faster and smoother spatio-temporal trajectory planning for autonomous vehicles in constrained dynamic environment”, Proceedings of the Institution of Mechanical Engineers, Part D: Journal of Automobile Engineering, 2020.
- C. Tang, **J. Chen**, and M. Tomizuka, “Adaptive Probabilistic Vehicle Trajectory Prediction Through Physically Feasible Bayesian Recurrent Neural Network”, International Conference on Robotics and Automation (**ICRA**), 2019.
- L. Xin, P. Wang, C-Y. Chan, **J. Chen**, S. Li and B. Cheng, “Intention-Aware Long Horizon Trajectory Prediction of Surrounding Vehicles using Dual LSTM Networks”, IEEE Intelligent Transportation Systems Conference (**ITSC**), 2018.
- B. Yuan, **J. Chen**, W. Zhang, and S. McMains, “Iterative Cross Learning on Noisy Labels”, IEEE Winter Conf. on Applications of Computer Vision (**WACV**), 2018.
- W. Zhan, **J. Chen**, C-Y. Chan, and M. Tomizuka, “Spatially-Partitioned Environmental Representation and Planning Architecture for On-Road Autonomous Driving”, IEEE Intelligent Vehicle Symposium (**IV**), 2017.
- C. Liu, **J. Chen**, T-D. Nguyen and M. Tomizuka, “The Robustly-Safe Automated Driving System for Enhanced Active Safety”, SAE World Congress, SAE Technical Paper 2017-01-1406, 2017.

#### **SKILLS**

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- Programming: Python, Matlab, C++, Java.
- Github: <https://github.com/cjy1992>
- Software and Platforms: Linux, Tensor Flow, PyTorch, ROS, Git, Matlab, Simulink.
- Hobbies: Table tennis (National level-2 Athlete in China).