Chengyuan ZHANG

Department of Civil Engineering, McGill University

CONTACT

- Homepage: https://chengyuanzhang.wixsite.com/home;
- Personal email: enzozcy@gmail.com; Work email: chengyuan.zhang@mail.mcgill.ca;
- Macdonald Engineering Building, 817 Sherbrooke St W, Room 396, Montreal, Quebec H3A 0C3, CANADA;

EDUCATION

McGill University — Montreal, Quebec, Canada
Ph.D. student (22'-), Master of Science (20'-22'), supervised by Prof. Lijun Sun — Sept. 2020 - Present

· **Cumulative GPA: 4.00/4.00**;
· **Scholarships:** Mitacs Globalink Research Award, 2022-2023; McGill Engineering Doctoral Award (MEDA), 2022-2025; FRQNT Master's Scholarship (B1X), 2022; CIRRELT Master's Scholarship, 2022; Graduate Excellence Fellowship Awards, 2020; IVADO Excellence Scholarships - Msc, 2020-2022;
· **Courses:** COMP588@McGill, IFT6135@UdeM, ECSE683@McGill, COMP540@McGill, CIV1532H@UofT
· Fast tracked to the Ph.D. program in 2022 with 4.00/4.00 Master's GPA;

Chongqing University — Chongqing, China
B.S. in Vehicle Engineering — Sept. 2015 – June 2019

· **Selected scholarships and awards:** National Scholarship, 2017; Outstanding Undergraduate Thesis Award, 2019; Outstanding Graduate of Chongqing University, 2019; Outstanding Student Award (top 3%), 2018 and 2017;
· Selected to **Excellent Student Program** (top 5%, on basis of outstanding academic performance;)
· Completed extensive coursework in **Electronics Science and Technology** (2015-2016.)

University of Pennsylvania — Philadelphia, Pennsylvania, USA
Exchange Student (Winter School) — Jan. 2018 – Feb. 2018

PUBLICATIONS

[1] ***Zhang, C.***, & Sun, L. (2023). Bayesian Calibration of the Intelligent Driver Model. In 102nd Annual Meeting of the Transportation Research Board (TRB 2023). Transportation Research Board (TRB). [arXiv][Github]

[2] Chen, X., ***Zhang, C.***, Zhao, X. L., Saunier, N., & Sun, L. (2022). Nonstationary Temporal Matrix Factorization for Multivariate Time Series Forecasting. arXiv preprint arXiv:2203.10651. [arXiv] [slides] [Github] [blog]

[3] ***Zhang, C.***, Zhu, J., Wang, W., & Xi, J. (2020). Spatiotemporal Learning of Multivehicle Interaction Patterns in Lane-Change Scenarios. *IEEE Transactions on Intelligent Transportation Systems.* [demo] [paper] [project website] [Github]

[4] Wang, W., ***Zhang, C.***, Wang, P., & Chan, C. (2020). Learning Representations for Multi-Vehicle Spatiotemporal Interactions with Semi-Stochastic Potential Fields. *2020 IEEE Intelligent Vehicles Symposium (IV).* [paper]

[5] ***Zhang, C.***, Zhu, J., Wang, W., & Zhao, D. (2019). A General Framework of Learning Multi-Vehicle Interaction Patterns from Videos. *2019 IEEE Intelligent Transportation Systems Conference (ITSC).* [paper]

[6] ***Zhang, C.***, Zhang, X., Ye, H., Wei, M., & Ning, X. (2019). An Efficient Parking Solution: A Cam-Linkage Double-Parallelogram Mechanism Based 1-Degrees of Freedom Stack Parking System. *Journal of Mechanisms and Robotics, 11*(4), 045001. [demo] [paper]

[7] ***Zhang, C.***, & Xiao, J. (2018). Chaotic Behavior and Feedback Control of Magnetorheological Suspension System with Fractional-Order Derivative. *Journal of Computational and Nonlinear Dynamics, 13*(2), 021007. [paper]

BOOKS

[1] Wang, W., Wang, L., ***Zhang, C.***, Liu, C., & Sun, L. (2022). Social Interactions for Autonomous Driving: A Review and Perspectives. *Foundations and Trends in Robotics: Vol. 10, No. 3-4, pp 197–376.* [book] [arXiv]

PATENT

[1] CN108222589B, Cam-connecting rod type mechanical three-dimensional parking device. ***Zhang, C.***, Zhang, X., Ye, H., Shi, J., Wang, M., & Ning, X. *Chongqing University.*

ACADEMIC EXPERIENCE

Carnegie Mellon University (Robotics Institute) Pittsburgh, Pennsylvania, USA
Visiting Researcher (supervised by Prof. Changliu Liu) (expected) Jan. 2023 – Aug. 2023

University of California, Berkeley (Department of Mechanical Engineering) Berkeley, California, USA
Visiting Researcher (supervised by Prof. Masayoshi Tomizuka) Sept. 2019 – Jan. 2020

DeeCamp 2020, DeeCamp 2019 (Sinovation Ventures) Guangzhou, Guangdong & Beijing, P.R. China
Deep Learning Summer Camp Participant June 2020 – Aug. 2020 (online), July 2019 – Aug. 2019

Carnegie Mellon University (Department of Mechanical Engineering) Pittsburgh, Pennsylvania, USA
Research Assistant (supervised by Prof. Ding Zhao) July 2018 – Oct. 2018

Chongqing University Formula SAE (Society of Automotive Engineers) Chongqing, P.R. China
Member of CQU-FSAE Transmission Group June 2016 – Jan. 2018

TEACHING EXPERIENCE

Basics of Machine Learning and Data Analysis (by Prof. Pradeep Ravikumar) *2022*
Teaching Assistant (Online), Department of Computer Science, Carnegie Mellon University

Traffic Engineering and Simulation (by Prof. Lijun Sun) *2022*
Teaching Assistant, Department of Civil Engineering, McGill University

Statistical Machine Learning (by Prof. Dino Sejdinovic) *2020 and 2022*
Teaching Assistant (Online), Department of Statistics, Oxford University

SELECTED AWARDS AND HONORS

· First Prize in the 2018 National College Mechanical Innovation Competition (TOP #10/5825 in China) 2018
· First Prize in the Contemporary Undergraduate Mathematical Contest in Modeling (#1/800 in Chongqing) 2017
· First Prize in the 2017 Global Mathematical Modeling Ability Certification- Stages I & II (< 1% in China) 2017
· Global Mathematical Modeling Capability Certificate - Advanced Certification (< 1% in China) 2017
· First Prize in the Chongqing University Physics Contest (#1/500 in CQU) 2015

ACADEMIC ACTIVITIES

· Workshop Organizer:
  - 1st SIAM workshop on IEEE IV23', Anchorage, Alaska, USA, 2023. [Website]
· Journal Reviewer:
  - Transportation Research Part C
  - IEEE Transactions on Intelligent Vehicles
  - ASME Journal of Mechanism and Robotics
  - ASME Journal of Mechanism Design
· Conference Reviewer:
  - IEEE International Conference on Intelligent Transportation Systems
· Student member of the IEEE & IEEE ITSS
· Member of the Society of Automotive Engineers (SAE) of China