

Laura Zheng

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EDUCATION

University of Maryland

Ph.D in Computer Science, advised by Ming Lin @ [GAMMA](#)

College Park, MD

Aug. 2020 – Present

University of Maryland

B.S. in Computer Science, University Honors; CS Departmental Honors; QUEST Honors

College Park, MD

Aug. 2016 – Dec 2019

CONFERENCE PUBLICATIONS

- [**NeurIPS 2023**] S. Son, **L. Zheng**, R. Sullivan, Y. Qiao, M. Lin. *Gradient Informed Proximal Policy Optimization*.
- [**ICRA 2023**] **L. Zheng**, S. Son, M. Lin. *Traffic-Aware Autonomous Driving with Differentiable Traffic Simulation*.
- [**NeurIPS 2021**] Y. Shen, **L. Zheng**, M. Shu, W. Li, T. Goldstein, M. Lin, *Gradient-Free Adversarial Training Against Image Corruption for Learning-based Steering*, Advances in Neural Information Processing Systems, 2021. 26250–26263.
- [**IROS 2020**] S. Akhauri, **L. Zheng**, M. C. Lin, *Enhanced transfer learning for autonomous driving with systematic accident simulation*, 2020 IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS), 2020. 5986–5993.

ONGOING PROJECTS

- L. Zheng**, J. Poveda, J. Mullen, S. Revankar, M. Lin. *Personality Modeling for Explainable, Robust, and Safer Autonomous Driving*.
- L. Zheng**, S. Son, M. Lin. *Kinematic Priors for Vehicle Trajectory Forecasting* (Under Review).
- L. Zheng***, Y. Shen*, S. Revankar, S. Liao, M. Lin. *Data augmentation methods for computer vision robustness benchmarks*.
- Y. Shen, **L. Zheng**, T. Zhou, M. Lin. *Task-Driven Domain-Agnostic Learning with Information Bottleneck for Autonomous Steering* (Under Review).

ORAL PRESENTATIONS

- [**GC-Women 2023**] *Traffic-Aware Autonomous Driving with Differentiable Traffic Simulation*. Poster presentation.
- [**BADUE @ IROS 2022**] *Exploring Contrastive Learning with Attention for Self-Driving Generalization*. Workshop presentation.
- [**AGU 2019**] *Understanding Machine Learning in Earth Science: A Natural Language Processing Approach*. Conference poster. **Laura Zheng**, Arif Albayrak, William Teng, Mohammad Khayat, Long Pham.
Developing a Machine-Learning-Based Processing Framework for Twitter and Other Crowdsourced Data. Conference poster. William Teng, Arif Albayrak, **Laura Zheng**, Rachel Li, Matteo Russo, Long Pham.
- [**AGU 2020**] *Towards a Domain-Informed Search Engine for NASA Earth Science Data*. Conference poster. William Teng, Arif Albayrak, **Laura Zheng**, Abhinav Kumar, Lauryn Wu, Long Pham, Mohammad G Khayat, Mahabal Hegde.

RESEARCH EXPERIENCE

Research and Development Intern Kitware Inc. // Project: Large-scale microscopic traffic simulation	May 2023 - Aug 2023 Carrboro, NC
Data Science Intern NASA Goddard Earth Sciences Data and Information Services Center / ADNET Systems	June 2019 - Aug 2020 Greenbelt, MD
Undergraduate Research Assistant University of Maryland	August 2019 – Dec 2019 College Park, MD
CRA-W DREU in Autonomous Driving University of North Carolina at Chapel Hill	May 2019 – July 2019 Chapel Hill, NC

TEACHING

CMSC 828X: Learning-based Modeling, Simulation and Animation , TA for Prof. Ming Lin	Fall 2022
CMSC 320: Data Science , TA for Prof. Jose Calderon	Spring 2021, 2022
CMSC 420: Data Structures , TA for Prof. Hanan Samet	Fall 2021
CMSC 131: Object-Oriented Programming , TA for Prof. Fawzi Emad	Fall 2020

HONORS AND AWARDS

Selected as Spotlight Talk at BADUE at IROS 2022	Fall 2022
CS Summer Research Fellowship	Fall 2021
Grace Hopper Scholarship	Fall 2020
Cornell, Maryland, Max Planck Pre-doctoral Research School	Summer 2020
QUEST Program, Cohort 29	Fall 2017 - Fall 2019
President's Scholarship	Fall 2016 - Spring 2020

SERVICE

- **Student Mentorship.** Graduate Student Mentorship Program (2022-2023); Current mentor for undergrad research, 3 students (2023); 3x Graduate Research Project Mentor for Tech+Research Track at Technica (2020-2022).
- **Conference and Workshop Reviewer.** IEEE Robotics and Automation Letters (RA-L) 2023; International Conference on Intelligent Robots and Systems (IROS) 2023; Behavior-Driven Autonomous Driving in Unstructured Environments (BADUE Workshop) 2022; International Conference on Intelligent Robots and Systems (IROS) 2020.

COURSES TAKEN

Foundations of Deep Learning, Learning-based Modeling, Simulation and Animation	Fall 2022
Robotics, Differentiable Programming, Advances in XR	Fall 2021, Spring 2022
Advanced Numerical Optimization, Data Visualization	Spring 2021
Parallel Computing, Interactive Technologies/HCI, ML Guarantees and Analysis	Fall 2020

TECHNICAL SKILLS

Languages: Python, Java, C#, Racket, C/C++
OS: Linux, Mac OSX, Windows
Software and Frameworks: Unity, PyTorch, Lightning, Tensorflow, CARLA, SUMO
Developer Tools: Git, VS Code, Visual Studio, Eclipse, Sphinx Documentation, Anaconda, LaTeX