Laura Zheng

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Education

University of Maryland College Park, MD
Computer Science PhD Student @ GAMMA Group ; Robotics and ML *Aug. 2020 – Present*

University of Maryland College Park, MD
B.S. in Computer Science *Aug. 2016 – Dec 2019*

Publications

Google Scholar

Traffic-Aware Autonomous Driving with Differentiable Traffic Simulation
- Under review at ICRA 2023. Project Website
- Implemented differentiable traffic simulation for deep learning frameworks, wrapper library for co-simulation between driving and traffic simulators, and generalizable method for acceleration optimization with objectives for social good

Gradient-Free Adversarial Training Against Image Corruption for Learning-based Steering NeurIPS 2021
- Yu Shen, **Laura Yu Zheng**, Manli Shu, Weizi Li, Tom Goldstein, Ming Lin

Enhanced Transfer Learning for Autonomous Driving with Systematic Accident Simulation IROS 2020
- Shivam Akhauri, **Laura Zheng**, Ming Lin ; Project Website

Understanding ML in Earth Science: A Natural Language Processing Approach AGU 2019
- **Laura Zheng**, Arif Albayrak, William Teng, Mohammad Khayat, Long Pham

Work Experience

Data Science Intern June 2019 - Aug 2020
NASA Goddard Space Flight Center / ADNET Systems *Greenbelt, MD*
- Developed a publication metadata data collection pipeline for scientists at Goddard
- Applied named entity recognition and relationship extraction natural language processing models on research literature text for knowledge base construction
- Attended various Geoscience academic conferences to present my group's work

CRA-W DREU in Autonomous Driving May 2019 – July 2019
University of North Carolina at Chapel Hill *Chapel Hill, NC*
- Researched and developed vehicle accident scenarios in Unity Game Engine

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