

# Laura Zheng

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## SUMMARY

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First-year computer science PhD student who is highly motivated to learn and proactive in problem solving. Has leadership and support roles in peer-reviewed publications, and extensive experience with machine learning and data science libraries, documentation conventions, presentation, and other soft skills. Seeking summer research internship roles broadly in autonomous driving and computer vision.

## EDUCATION

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### University of Maryland

*Computer Science PhD Student*

College Park, MD

*Aug. 2020 – Present*

### University of Maryland

*Bachelor of Science in Computer Science*

College Park, MD

*Aug. 2016 – Dec 2019*

## EXPERIENCE

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### Intern

*NASA Goddard Space Flight Center / ADNET Systems*

June 2019 - Aug 2020

*Greenbelt, MD*

- Developed a publication metadata data collection pipeline for scientists at Goddard
- Researched and 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

*University of North Carolina at Chapel Hill*

May 2019 – July 2019

*Chapel Hill, NC*

- Researched and developed vehicle accident scenarios in Unity Game Engine
- Conducted literature review of existing traffic studies and pre-crash scenarios
- Gained experience in academic paper writing

## PUBLICATIONS AND PROJECTS

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### Improving Generalization of Transfer Learning Across Domains

ICRA 2021

- Project website: <https://gamma.umd.edu/stltransfer>
- *Currently under review at ICRA 2021*
- Conducted an ablation study on the significance of selected spatio-temporal features in learning-based autonomous driving decision making
- Proposed an enhanced transfer learning model which improves generalization to unseen test domains

### Analyzing the Influence of Image Quality and Style in Learning to Steer

ICLR 2021

- *Coauthor, currently under review at ICLR 2021*
- Explored the domain gap between real, virtual, and style transferred images
- Analyzed the influence of image quality reduction over various noises, occurring digitally and naturally

### Enhanced Transfer Learning for Autonomous Driving with Systematic Accident Simulation

IROS 2020

- Project website: <https://gamma.umd.edu/etladsas>
- Systemically parameterized and simulated common accident scenarios in Unity
- Contributed a proof of concept in combining simulated driving data and real-world driving data to train an imitation learning model

### Understanding ML in Earth Science: A Natural Language Processing Approach

AGU 2019

- Presented this project as an e-lightning presentation at the American Geophysical Union winter meeting in 2019
- Visualized relationships between academic publications in Earth Science and Machine Learning
- Drew insights using natural language processing in order to find relationships between machine learning methods and Earth Science research tasks

## TECHNICAL SKILLS

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**Languages:** Python, Java, C#, Racket, C/C++

**Developer Tools:** Git, VS Code, Visual Studio, Eclipse, Sphinx Documentation, Anaconda