

# Lux Zhang

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## EXPERIENCE

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### Software Engineer

Jan 2025 – Current

*Maritime Physics Applied Corporation*

*Baltimore, MD*

- Integrated RTI Connex DDS into legacy software and collaborated with cross-functional engineers in advancing UMAA (Unmanned Maritime Autonomy Architecture) compliance and enhancing system interoperability.
- Performed Agile sprint planning by leveraging GitLab's project management tools to streamline workflows, ensuring prioritized resolution of technical challenges in a dynamic team environment.
- Executed hardware integration tasks within an RTOS environment to incorporate a new safety controller, planning and performing system regression testing and test data analysis to ensure consistent performance and reliability.

### Junior Software Engineer

Jan 2023 – Jan 2025

*Maritime Physics Applied Corporation*

*Baltimore, MD*

- Efficiently migrated a 50,000-line C embedded software codebase between proprietary real-time operating systems, maintaining continuous operation and full functionality of vessel control systems.
- Spearheaded migration of Data Distribution Service (DDS) frameworks for internal communications, introducing modern, memory-safe programming practices and updating build environments from GNU Automake to CMake to align with industry standards.
- Designed and implemented mission-critical features while meeting evolving specifications and demands.

### Full Stack Web Dev Intern

June 2022 – Aug. 2022

*Farpoint Learning*

*Columbia, MD*

- Developed a full-stack web application using MUI (Material UI), Next.js, React, MongoDB and Docker Compose for customer retention and user portal.
- Deployed backend on AWS EC2, configured DNS and domain name, and performed SEO to optimize core web vitals.

### Data Analyst Intern

May 2020 – Aug. 2020

*Federal Motor Carrier Safety Administration*

*Baltimore, MD*

- Identified and analyzed highest-risk road segments for large vehicle traffic in 23 Maryland counties and Baltimore City using ArcGIS, Python, ArcPy, and R.
- Developed and automated detailed visual reports to guide state-wide allocation of safety resources for the chief safety officer, regional field administrator, and data analyst team.
- Extracted and processed data (ETL) from state crash datasets in CSV and Excel (.xls) format using pandas and NumPy.

### Data Science Intern

May 2019 – Aug. 2019

*Laureate Education*

*Baltimore, MD*

- Modernized a legacy dataset of 8 years of customer enrollment information in Oracle Database into Microsoft SQL Server by aggregating, transforming, and cleaning data with SQL, Python, pandas, NumPy, Anaconda, and Jupyter Notebook.
- Delivered seminar on introductory Python data analysis and machine learning (ML) techniques to a team of 20+ predominantly R and SAS professionals.

## EDUCATION

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### Cornell University

Ithaca, NY

*Bachelor of Science in Computer Science, Minor in English; GPA: 3.5*

*Aug. 2018 – May 2022*

## TECHNICAL SKILLS

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**Programming Languages:** C++, C, Python, TypeScript, JavaScript, HTML, CSS, SQL

**Tools & Platforms:** Git, Docker/Docker Compose, VS Code, CMake, Jupyter Notebook, Linux, GitLab, SharePoint

**Web Development:** React, Node.js, Next.js, MUI v5, TailwindCSS, MongoDB

**Embedded Systems & Protocols:** CAN bus, RTOS, J1939, NMEA 2000, Protobuf, DDS