

Emily Xie

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Education

Carnegie Mellon University - Bachelor of Science in Information Systems and Computer Science MAY 2025

GPA: 4.0/4.0 | Selected Coursework: Introduction to Machine Learning, Introduction to Computer Systems, Computer Graphics, Database Design and Development

Experience

Software Engineer Intern - NASA Jet Propulsion Laboratory JUNE 2023 - AUGUST 2023

- Worked on Europa Clipper – NASA mission launching in 2024 to explore Jupiter’s icy moon, Europa.
- Involved in the Planning and Execution Software team to develop software for mission planning and sequencing.
- Completed a variety of programming tasks in Java involving a simulatable software model of Europa Clipper.
- Implemented scripts in Python and GraphQL to improve operations workflow, used by over 30 members.
- Contributed over 10,000 lines of code to codebase and presented 4 technical reports.

Research Assistant - CMU Augmented Perception Lab SEPTEMBER 2022 - JUNE 2023

- Conducted research on sound spatialization in AR/VR environments and UI layout optimization.
- Designed algorithm in Python to optimize auditory layout of UI elements in AR/VR environments.
- Collaborated with lab members to create 3 experimental setups in Unity to gather data.
- Facilitated weekly team meetings to discuss experimental design and summarize findings.
- Conducted over 20 studies with participants.

Visiting Scholar/Research Intern - UCSF Department of Radiology JUNE 2020 - APRIL 2022

- Used computational techniques on a large clinical dataset to find trends in knee meniscus shape and osteoarthritis.
- Programmed MATLAB and R scripts to extract medical imaging data and analyze statistical correlations.
- First-authored accepted poster presentation for OARSI 2022 World Congress Conference.
- Cooperated closely with two supervisors during daily and weekly meetings to ask questions, discuss research methods, and work through obstacles.

Publications

- [1] Kenneth T. Gao, **Emily Xie**, Vincent Chen, Claudia Iriondo, Francesco Calivà, Richard B. Souza, Sharmila Majumdar, and Valentina Padoa. “Large-Scale Analysis of Meniscus Morphology as Risk Factor for Knee Osteoarthritis.” *Arthritis & Rheumatology*, 2023, doi: 10.1002/art.42623.
- [2] Sana Vaziri, Huawei Liu, **Emily Xie**, Helene Ratiney, Michaël Sdika, Janine M. Lupo, Duan Xu, and Yan Li. “Evaluation of Deep Learning Models for Quality Control of MR Spectra.” *Frontiers In Neuroscience*, 2023, doi: 10.3389/fnins.2023.1219343

Projects/Activities

TEDxCMU - Innovation Team Lead AUGUST 2021 - PRESENT

- Collaborated with Innovation Team to set up technological experiences for TEDx events, including an interactive projection mapping installation and StoryMap, a location-based web application for sharing stories around campus.
- Experimented with Three.js and Next.js to create a dynamic 3D homepage for the 2023 Main Event.
- Reached out to over 20 organizations to send invitations for presenting at Innovation Expo.

Skills

Programming: Python, Javascript, React, HTML/CSS, Java, SQL, Postgres, Matlab, R, Swift, Firebase, C/C#/C++
Creative: Unity, Blender, Three.js, Photoshop, Procreate