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: Distributed Systems, Machine Learning, Computer Graphics, Application Design and Development, Database Design and Development, Data Structures and Algorithms, Creative Coding

Experience

Software Engineer Intern - NASA Jet Propulsion Laboratory June 2023 - August 2023

- Worked on mission-critical planning software for Europa Clipper – NASA mission launching in 2024 to explore Jupiter's icy moon, Europa.
- Completed over 20 backend programming tasks in Python, GraphQL, and Java to simulate a software model of Clipper and improve operations workflow.
- 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 2 optimization algorithms in Python to create auditory layout of UI elements in AR/VR environments.
- Collaborated with lab members to create 3 experimental setups in Unity and conducted over 30 studies with participants.

Visiting Scholar/Research Intern - UCSF Department of Radiology June 2020 - April 2022

- Developed two machine learning and data analysis pipelines for medical imaging datasets.
- Published two papers and first-authored accepted poster presentation for OARSI 2022 World Congress Conference.
- Converted library of MATLAB scripts to aid lab's transition to Python.

Publications

[1] Kenneth T. Gao, **Emily Xie**, Vincent Chen, Claudia Iriondo, Francesco Calivà, Richard B. Souza, Sharmila Majumdar, and Valentina Pedoia. "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

Teaching Assistant - 10-601 Introduction to Machine Learning August 2023 - Present

Innovation Team Lead - TEDxCMU August 2021 - Present

- Collaborated with team of 5 to set up technological experiences for TEDx events, including an interactive projection mapping installation and a full-stack web application for sharing stories around campus.
- Experimented with dynamic 3D homepage using Three.js for 2023 Main Event website and led frontend development of Schedule and About pages in Next.js.

Indie Game Developer - Jazzcats! August 2021

- Architected, drew, and published full-stack iOS mobile game about jazz and cats.
- Obtained over 350 downloads across 10 countries.

Skills

Programming: Python, Javascript, Typescript, React, HTML/CSS, Pytorch, Docker, Java, Go, C/C#/C++, Ruby, SQL, MongoDB, GraphQL, Swift, Firebase, Unity, Blender, Three.js, Photoshop