

Deya Liao

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EDUCATION

Carnegie Mellon University

Pittsburgh, PA

B.S Computer Science, B.A Film & Visual Media, Minor in History (3.61 GPA)

Aug. 2021 – May 2026

- Fifth Year Scholar Recipient: Free tuition + \$7,000 fellowship to support a 5th year of study at CMU
- **Technical Courses**: Design and Algorithm Analysis, Parallel + Sequential Data Structures and Algorithms, Computer Graphics, Computer Systems, Computer Vision, Functional Programming, Discrete Math
- **Creative Courses**: Communication Design, Product Design, Film Production, Literary Theory, Screenwriting
- **Extracurriculars**: Club Badminton, Dancers Symposium, Orientation Counselor, Student Photographer

EXPERIENCE

Software Development Engineer Intern

May 2024 – Aug 2024

Project Kuiper at Amazon

Redmond, WA

- Programmed backend infrastructure for a new data visualization website, creating a complex architecture that weaved AWS services such as Route53, CloudFront, Lambda, S3 within Amazon's development pipeline
- Conducted user research by interviewing my team's engineers and manager to determine optimal ways to visualize our product's key performance indicators using graphs and navigate site layout. Built mockup using Figma.
- Coded interface using Amazon's web development framework—visualizing queried data located in CloudWatch from an Athena-CloudWatch connector within Amazon QuickSight. Configured SSO authentication.

Design Research Intern

May 2023 – Aug 2023

Morphing Matter Lab

Pittsburgh, PA

- Developed optimization algorithm for MetaTruss, a morphing variable geometry truss, to determine optimal structure with actuation mechanisms and topology changes using Python, C++, and Taichi
- Conceptualized real-world environmental applications for morphing truss structure, by animating short animations of the morphing 3D truss structure frame by frame in Blender and Procreate

Teaching Assistant

Aug 2022 – Aug 2023

Principles of Functional Programming (15150)

Pittsburgh, PA

- Co-taught 2 80-minute recitations with 20+ students weekly + midterm review sessions with up to 150 students
- Expanded course's supplementary material by designing standardized lab and review slides with 100+ views and collaborating with course staff to improve homework readability
- Cultivate student learning by grading & holding office hours for 100+ students by debugging code and facilitating guidance on recursion, polymorphism, higher-order functions, and parallelism

Web Development Intern

May 2022 – Aug 2022

Carnegie Mellon University

Pittsburgh, PA

- Implemented an online knowledge graph for learning by representing hierarchical taxonomies in Wikidata, using HTML, CSS and Cytoscape (JS open-source graph theory library) with **Prof. Dave Touretzkzy**
- Streamlined data scraping algorithm in Python to parse large TTL files, hosting data to query relevant information from WikiData's database in the language SPARQL

PROJECTS

Dynamic Memory Allocator | C

March 2023

- Devised an implementation of Malloc in C, ranked 4th/260 students in throughput + utilization, successfully simulating dynamic memory allocation with a cache to parse requests efficiently

TECHNICAL SKILLS

Languages: C, Python, Standard ML (SML), C++, JavaScript, HTML/CSS, SQL, Java

Developer Tools + Libraries: Git, VS Code, Visual Studio, Vim, \LaTeX , NumPy

Creative: Adobe Illustrator, Adobe Premiere Pro, Adobe Lightroom, Figma