CYNTHIA CHANG

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EDUCATION

M.S. Computer Science (with Thesis), University of Southern California 2023 - 2024
Master's Thesis: "Reconstructing 3D Reconstruction: A Graphical Taxonomy of Recent Techniques"
Courses: 3D Animation & Simulation, Deep Learning, Analysis of Algorithms, Database Systems, Robotics

B.A. Computer Science, University of California, Berkeley 2016 - 2020
Courses: Computer Graphics & Imaging, Machine Learning, Artificial Intelligence, Efficient Algorithms & Intractable Problems, Discrete Mathematics, Computer Security, Principles of Data Science
Relevant Course Project: Minecraft Water Shader

- Final group project for the graphics course. Implemented the Blinn-Phong shading model in OpenGLSL & C++, on sampled environment textures and variable light which produced efficient, playable in-game renderings of water reflections and movement.

SKILLS

Languages C/C++, C#, Python, Java, JavaScript/TypeScript, JSON, XML, HTML, CSS/SCSS, OpenGLSL, SQL, LaTex

Technologies Git, Angular, NodeJS, RESTful services, Object-Oriented Programming, Pandas, PyTorch, CUDA, Visual Studio, VSCode, IntelliJ IDEA, Atlassian (Jira, Confluence, Bitbucket), Linux, Windows, MacOS

PROFESSIONAL EXPERIENCE

CHARLES SCHWAB & CO., INC, Remote / San Francisco, CA / Austin, TX
Specialist, Software Engineer (Fullstack) 2022 - 2023
Software Developer, Associate (Fullstack) 2020 - 2022

- Promoted within 1.5 years for: consistently exceeding performance standards; efficiently updating legacy C# RESTful API code to consume a new database service; and proactively becoming the team subject matter expert on the modernization of the firm's new internal user experience design system.
- Demonstrated high-level independent work, and shared senior engineer responsibilities, including: development representation in cross-functional meetings, UI design technical spec translations, real-time code fixes, feature merging, peer reviews, and production release assistance.
- Core member in both the maintenance of legacy code, and the continued modernization effort for the company's most-visited web page using Angular, HTML, and CSS/SCSS - improving the user interface experiences for over 40 million clients with over 10 unique page behavior tracks.
- Collaborated effectively with colleagues in a CI/CD Agile environment using the Atlassian suite, providing valuable developer input to business partners and increasing the clarity of technical requirements in sprint planning, which decreased development completion time by 1-2 days in sprints.

NEW STUDENT SERVICES, University of California, Berkeley, Berkeley, CA
Student Coordinator 2018 - 2019

- Increased recruitment of STEM student volunteers by 15%+ by exposing volunteer recruitment events to STEM-specific locations on campus. Surveys from newly admitted STEM students reported higher feelings of inclusion and representation in their orientation activities.
- Developed a Python script to automate grouping of 9,000+ students, reducing manual work by 95%.
- Collaborated with staff supervisor and campus partners to organize 7 off-campus excursions, designing a cohesive template for 140+ unique itineraries and serving as the liaison for all communication between venues, student leaders, and volunteers during the event week.
- Planned, conducted, and improved upon large-scale matriculation seminars with team of 4 Student Coordinators. Surveys reported improvement by 10%+ in seminar training length and usefulness.

Orientation Mentor 2018
Orientation Leader 2017

- Coached groups of 10 students throughout Mentor (and Coordinator) positions, providing teaching and conflict support for 600+ volunteer student leaders.
- Guided 40 new transfer students as an Orientation Leader on college resources in the inaugural Golden Bear Orientation week.

Research Experience

M.S. Student, University of Southern California 2023 - 2024
Advisor: Prof. Saty Raghavachary

- Performed an extensive literature review of state-of-the-art research in computer graphics and deep-learning based reconstruction methods.
- Organized and presented 40 recent advancements in 3D reconstruction methods as graphical taxonomies, each as a tree rooted in a different research objective.
- Developed scripts in Bash for data management and running remote, high performance GPU cluster jobs, and in Python for file format conversion to create .OBJ mesh outputs for 3D vertex analysis.
- Analyzed existing neural network algorithms for 3D mesh reconstruction and joint/pose predictions.

Research Apprentice, University of California, Berkeley 2019
Supervisor: Dr. Qingkai Kong

- Fine-tuned machine learning algorithms for improved seismic wave analysis and earthquake predictions in the San Francisco Bay Area.
- Automated data-cleaning procedures for seismic wave data with Python Pandas and ObsPy.
- Developed parallel-process functions for extracting data in Google Colab and Github repositories.

Teaching Experience

CS61A Academic Intern, University of California, Berkeley 2018

- Supported 50 undergraduate students during labs on Python coding assignments and understanding theoretical material, including: data structures, object-oriented programming, recursion, inheritance.
- Informally commended by several lab students for clear teaching and easy-to-understand explanations.

English Volunteer Teacher, Overseas Community Affairs Council, Taiwan Aug 2015

- Created beginner-level language immersion lesson plans for underprivileged/rural youth in Taiwan.
- Taught a class of twenty 5-7 year old summer camp students using language immersion techniques, explaining in Mandarin Chinese when necessary.

Other

Foreign Languages English (*native*), Mandarin Chinese (*native*)

Interests Piano, Horticulture, Motorsports, Climbing, Art