Meredith Young-Ng

meredithyoung-ng.github.io
Email: mjyoungng@ucdavis.edu, Cell: (408) 702-7408

EDUCATION

UNIVERSITY OF CALIFORNIA, DAVIS　　　　　　　　　　　　　　　　　　　　　Davis, CA
Ph.D. in Computer Science　　　　　　　　　　**GPA**: 4.00　　　*Sept. 2021 — Present*
- **TA**: ECS 164: Human-Computer Interaction (Winter '22)

BROWN UNIVERSITY　　　　　　　　　　　　　　　　　　　　　　　　Providence, RI
M.S. in Computer Science　　　　　　　　　　**GPA**: 3.88　　　*May 2021*
- **Head TA**: CSCI 1951-C: Designing Humanity Centered Robots (Fall '19); TA: CSCI 1290: Computational Photography (Fall '20)

CORNELL UNIVERSITY　　　　　　　　　　　　　　　　　　　　　　　　Ithaca, NY
B.S. in Computer Science, Cum Laude | Minor: Information Science　　**GPA**: 3.74　　　*May 2019*
- **TA**: CS 4620: Intro to Computer Graphics (Fall '18) and CS 4820: Intro to Analysis of Algorithms (Spring '19)

RELATED EXPERIENCE

LAWRENCE LIVERMORE NATIONAL LABORATORY, *Game & Simulation Developer*　　*Jan. 2023 — Present*
- Designing and implementing radiation detector user interfaces and system communications for TARANTULA, an AR system with a real-time radiological data simulator for single and multi-person, multi-detector nuclear response training scenarios
- Developing a 3D visualization for radiation sensor network data to help detect and analyze cosmic air shower events

UC DAVIS COLLABORATIVE AND SOCIAL COMPUTING LAB, *Research Assistant*　　*Feb. 2023 — Present*
- Developing a human-AI copilot system to support group brainstorming via ideation maps for creative problem solving
- Designing a user study evaluation using an AI bot collaborator to explore user perceptions of human agency and AI behavior

UC DAVIS INTERACTIVE ORGANISMS LAB, *Research Assistant*　　*Sept. 2021 — Dec. 2022*
- Developed Sweatcessory, a wearable choker necklace prototype with an embedded sodium sweat biosensor and a real-time analyte data visualization; implemented web application using Javascript and Chrome Bluetooth (ISWC 2022 poster)
- Designed a co-design workshop evaluation for usability and wearability considerations of sweat biosensor form factors

BROWN VISUAL COMPUTING LAB, *Research Assistant*　　*Sept. 2020 — May 2021*
- Implemented occlusion map option for a real-time amortized deep view synthesis method to learn depth and disocclusions for VR, using layered multi-sphere images from 6DoF omnidirectional stereo (ODS) video with Tensorflow

BROWN HUMAN-COMPUTER INTERACTION LAB, *Research Assistant*　　*Aug. 2019 — Feb. 2021*
- Designed and fabricated a hand-mounted wearable display (Portalware) that expands the free-hand interaction region in an AR smartphone-wearable dual-display mid-air 3D sketching system; published at CHI 2020 LBW & DIS 2021
- Assisted with autobiographical design study to generate user feedback to iterate upon the Portalware system

GE RESEARCH, *Edison Program Intern – Technical Research (Software & Analytics Group)*　　*June 2020 — Sept. 2020*
- Designed and implemented analytical deep learning tool to classify electric breaker faults from RTDS simulated phasor measurement (PMU) time series data; developed two new multi-PMU feature embedded image encoding approaches with Python
- Trained MLP and FCN models with PMU image encoding inputs with Tensorflow, confirming viability of approach

PROJECTS

SMALL MULTIPLES SEQUENCE-CONTROLLED TF EDITOR　　　　　　　　*Nov. — Dec. 2021*
- Created new small multiples sequence-controlled transfer function (TF) user interface for a 3D volume visualization tool for designers with Javascript and WebGL. Conducted an exploratory user study, demonstrating faster task completion time than the baseline TF editor; analyzed results to develop recommendations for improving learnability in 3D visualization tools for designers.

PATH TRACER　　　　　　　　　　　　　　　　　　　　　　　　*Feb. 2020*
- Built a physically realistic CPU path tracer in C++ with Qt. Implemented soft shadows, indirect illumination, Russian Roulette path termination, and event splitting with ideal diffuse, glossy specular, ideal specular (mirror), and dielectric refraction BRDFs.

SKILLS/INTERESTS

PROGRAMMING LANGUAGES: Python, Java, Javascript, C++, C, HTML, CSS, R, SQL, MATLAB, LaTeX
FABRICATION SKILLS: CAD (Fusion 360), 3D Printing, Laser Cutting
INTERESTS: STEM Outreach ♦ Violin ♦ Chamber Music ♦ Electric Cars ♦ Pokémon ♦ Creative Writing