Meredith Young-Ng

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EDUCATION

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

BROWN UNIVERSITY <div align="right">Providence, RI</div>
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 <div align="right">Ithaca, NY</div>
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, *Software Engineer*   *Jan. 2023 — Present*
- Trained ML models to classify types of drug molecule images to help extract journal publications' chemical data into a database
- Implementing real-time simulated radiation detector UIs and AR system communications for nuclear response training scenarios
- Developing geographic and graphing visualization tools for radiation sensor network data to help detect 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