Elle Luo

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EXPERIENCE

AMAZON LAB126 | Usability Specialist III, Industrial Design. Sunnyvale CA | 01/2022 - Present

- Designed and conducted research, user interviews, and benchmarking studies to assess critical elements in defining design and specification of products.
- Work with Engineering, User Experience (UX), external partners and prospective users and contribute towards defining and building awesome experiences for new devices and products.
- Contributed towards the vision of critical functions through research of a variety of products, including wearables, consumer robots, e-readers and more.

GOOGLE (Via Pro Unlimited) | Human Factors/UX Researcher, Wearables. Mountain View CA | 09/2021 - 11/2021

- Designed and distributed survey to collect/analyze quantitative and qualitative data to understand product usability and user experience.
- Conducted in-person user studies, analyze the results and provide report and overview product findings.
- Led a product research for teams communication and delivered reports to contribute towards positive user experience and product outcomes of Google's wearables, Pixel Watch.

DESIGN & AUGMENTED INTELLIGENCE LAB | Graduate Research Assistant. Ithaca NY | 04/2020 - 08/2021

- Developed wearable electroencephalography (EEG) devices that involves design decisions, fabrication, and building functional prototypes.
- Analyzed EEG in time series and power distribution through programming in MATLAB and compared the signal quality of prototypes with commercially available EEG products for device validation.
- Designed and conducted in-person user research experiments assessing usability, user experience and social acceptability of wearable EEG system.

HYBRID BODY LAB | Research Intern. Ithaca NY | 01/2019 - 03/2020

- Built an on-skin wearable capacitive sensing device that afford blink detection programmed in Arduino IDE.
- Conducted 20 subjects in-person user studies and over 200 subjects online studies evaluating user's perceptions in wearable technology.

INTERACTIVE ORGANISMS LAB | Undergraduate Research Assistant. Davis CA | 01/2018- 12/2018

- Developed a multisensory Virtual Reality (VR) environment with Unity 3D programmed in C# and Arduino IDE.

EDUCATION

Cornell University | M.S. Human Factors and Ergonomics; Minor: Computer Science
Thesis: Designing Microbead Wearable EEG Electrodes for Human Computer Interfaces

UC Davis | B.A. Design, Interaction Design

PROJECTS

NEUROBITS WEARABLE, EEG, UX

Invented wearable EEG electrodes that use silicone microbeads to attach to the hair while recording brain signals. The system was evaluated in a user study, examining signal quality and user experience in a natural environment.

NEURALUX EEG, FOCUS SENSING, ARDUINO

Built the EEG data-driven lighting system by implementing microcontroller for wirelessly data transmission and real-time classifying concentration levels.

ESLUCENT WEARABLE, EYE BLINK DETECTION

Developed an on-skin wearable capacitive sensing device that affords blink detection. It detects blinks during intentional blinking and four involuntary activities by a falling edge detection algorithm.

SKILLS

Mixed research methods: Survey Design (Qualtrics, DScout), User Interview, Usability Testing, Content Analysis
Technology: Python, Statistical Analysis, Prototyping, Arduino, JavaScript, HTML/CSS, Autodesk Fusion 360
Art & Design: Adobe Creative Suite, Figma, Creative Coding, Photography, Drawing
Soft skills: Bilingual Communicator (English, Mandarin), Teamwork, Leadership, Problem Solving

HONOURS & AWARDS

Best Paper Honourable Mention Award | ACM International Symposium on Wearable Computers (ISWC) 2019

PATENTS

Cindy Hsin-Liu Kao, Elle Luo. An Eyelid Interface for Detecting Eye Blinking. U.S. Patent 63/077,516, filed September 11, 2020. Manuscript Provisional.

PUBLICATIONS

1. E. Luo. NeuroBits: Designing Microbead Wearable EEG Electrodes for Human-Computer Interfaces. 2021.
2. E. Luo, R. Fu, A. Chu, K. Vega, and H.-L. Kao. Eslucent: an eyelid interface for detecting eye blinking. In Proceedings of the 2020 International Symposium on Wearable Computers, pages 58–62, 2020.
3. E. Luo and K. Vega. Scentery: a calming multisensory environment by mixing virtual reality, sound, and scent. In Proceedings of the 20th International Conference on Human-Computer Interaction with Mobile Devices and Services Adjunct, pages 158–165, 2018.
4. C.-W. You, Y.-F. Lin, E. Luo, H.-Y. Lin, and H.-L. Kao. Understanding social perceptions towards interacting with on-skin interfaces in public. In Proceedings of the 23rd International Symposium on Wearable Computers, pages 244–253, 2019.