

BO LIU

Portfolio: boliu97.github.io

boliu97@outlook.com

EDUCATION

Cornell Tech

PhD in Computer Science

Advised by Dr. Rajalakshmi Nandakumar & Dr. Thijs Roumen

Starting Fall 2023

NYC, NY

University of Washington

Master's in Technology Innovation

2021 – March 2023

Seattle, WA

Clark University

Bachelor of Arts in Computer Science, *Dean's List (2020)*

Minor in Entrepreneurship

2016 – 2020

Worcester, MA

RESEARCH EXPERIENCE

Graduate Research Assistant, Cornell University

August 2023 - present

- Building a Synthetic-aperture radar system with mmWave enables fabrication with heterogeneous materials.
- Researching acoustic sensing methods for analyzing mechanical conditions in assembly furniture.

Research Assistant, Ubiquitous Computing Lab

July 2020 - April 2023

Advisor: Shwetak Patel

Seattle, WA

- Designed TOF-based wearable rings for finger movement tracking.
- Researched and fabricated clothing with embroidered fabric speakers for body movement tracking.
- Researched Intestinal Bowel Disease users' social considerations and preferences on using health apps (self-monitoring apps) with qualitative interview study. [P1]
- Designed and implemented a novel method to read glucose strips using a mobile phone sensor. These new sensors are more convenient and affordable than existing patient adherence methods.

Research Assistant, Make4All Lab

September 2022 - September 2023

Advisor: Jennifer Mankoff

Seattle, WA

- Researching the haptic exploration of embroidered tactile graphics, abstracting physical information for optimization.

Research Assistant, Pervasive HCI Group, Tsinghua University

April 2021 - August 2021

Advisor: Chun Yu

Beijing, China

- Designed and implemented a novel tool that allows people without video editing skills to conveniently create video tutorials for elderly-friendly smartphone usage.[P2]
- Served as project manager intern, conducting user research and profiling the target market to turn a research project into a commercial product.

Research Assistant, Clark Computing Lab

September 2019 - May 2020

Advisor: Niu Shuo, John Magee

Worcester, MA

- Created three AI-powered applications to track users' mental states and promote better connections between patients and doctors.
- Researched current-stage mental health issues and mobile applications used for mental disorder logs.

PUBLICATIONS

- [P1] **Bo Liu**, Jason Hoffman, Chloe Sow, Yuqing Zhang, Shwetak Patel. *"Too simple or way too complicated": Patients' Preferences for E-Health Apps for IBD Management*. Manuscript revised and submitted to *MobileHCI*.
- [P2] Xiaozhu Hu, Yanwen Huang, **Bo Liu**, Ruolan Wu, Yongquan Hu, Aaron J Quigley, Mingming Fan, Chun Yu, Yuanchun Shi. *SmartRecorder: An IMU-based Video Tutorial Creation by Demonstration System for Smartphone Interaction Tasks*. Accepted at *IUI23*.
- [P3] **Bo Liu**, Wenyu Wang, Yuqing Zhang, Rui Huang, and John Raiti. *Lullaland: A Multisensory Virtual Reality Experience to Reduce Stress*. Accepted at *CHI23* (Late-Breaking Work).
- [P4] Shuo Feng, **Bo Liu**, Yifan (Lavenda) Shan, Ofer Berman, Harald Haraldsson, Thijs Roumen. *Y-AR: A Mixed Reality CAD Tool for 3D Wire Bending*. [Preprint at arXiv](#).

TEACHING EXPERIENCE

- **CS 5112 - Algorithms and Data Structures for Applications** *Fall 2024*
Role: Teaching Assistant
- **TECHIN 513 - Managing Data and Signal Processing** *Spring 2023*
Role: Grader

TALKS

- [T1] **SoundShirt: Continuous body tracking using embroidered speakers on clothing**, Nov 2022
University of Washington Annual Research Showcase, Seattle, WA
- [T2] **Deep Learning in Art styles Recognition**, Oct, 2019
Clark Fall Fest, Worcester, MA

PROFESSIONAL EXPERIENCE

IT Specialist, Global Innovation Exchange January 2022 - Dec 2022

- Providing technical support to startups, faculty, and students ensuring proper workstation, printer, and VR/AR materials maintenance.
- Maintaining inventory management/surplus control.
- Implemented and maintained security camera systems.

Software Engineering Intern, Synopsis August 2020 - May 2021

- Developed software to solve Incremental Boolean Satisfiability (SAT) problem, which reduces chip verification time. Implementing this by including functions missing in the existing industry-leading software.
- Designed and developed dashboards that convert JSON data into easy-to-understand information, allowing customers to get information without having to understand JSON files and conduct analysis.

ADDITIONAL PROJECT

Software Engineer & UX Researcher, Artify June 2022 - December 2022
Sponsored by T-Mobile

- A graduate project designed a future AR museum visit using 5G and cloud computing.
- Investigated current AR applications' limitations and general public interactive museum visiting experience with quantitative methods.
- Designed and developed frontend interfaces and backend servers to connect Hololens(AR devices) with three rounds of usability testing.

MENTORSHIP

1. Chloe Sow (Senior high school student)

Researched and designed semi-structure interview questions and prototype[P1]

AWARD

Siegel PiTech PhD Impact Fellowship 2024

Cornell Fellowship 2023

Gary Marsden Travel Award 2023

University of Washington Graduate Student - Conference Presentation Awards 2022

ClarkCONNECT Award 2020

Selected as a funded student to attend Giersch International Symposium, Germany, 2019

SKILLS

Programming Skills: C++, Python, Kotlin, Java

Fabrication: Arduino, Circuit Design, Embroidery Design, 3D Printing, Laser Cutting

User Research: IRB Writing, Interface Design, Interview Design, Qualitative Data Analysis