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Education

University of Washington

Ph.D, Computer Science and Engineering

Sep.2019 - present

Advisor: Shwetak Patel, Vikram Iyer

Georgia Institute of Technology

M.S, Computer Science and Technology

Aug.2017 - May.2019

Advisor: Gregory Abowd, Thad Starner

Peking University, China

B.S., Computer Science and Technology

Sep.2013 - Jul.2017

B.S., Microelectronics Science and Engineering

Advisor: Chenren Xu

Research

Smartphone and 3D print Stethoscope for Telemedicine

UBICOMP LAB, UNIVERSITY OF WASHINGTON

- Designed a smartphone based stethoscope and 3D printed stethoscope to use at home in Telemedicine applications.

May. 2020 - present

Advised by Prof. Shwetak Patel

Self-powered Stethoscope Patch

UBICOMP LAB, UNIVERSITY OF WASHINGTON

- Developing a self-powered on-body patch to capture inside body sound using TENG and wireless communication.

May. 2020 - present

Advised by Prof. Shwetak Patel

Radar and Camera Fusion for Contact-less Breathing and Heart rate Monitoring

UBICOMP LAB, UNIVERSITY OF WASHINGTON

- Developing a radar and camera fusion system for robust and precise breathing and heartbeats sensing.

Oct. 2020 - present

Advised by Prof. Shwetak Patel

Airdropping Sensor Networks from Drones and Insects[\[link\]](#)

NETWORK & MOBILE SYSTEMS LAB, UNIVERSITY OF WASHINGTON

- Designed a light and low-power airdropping sensor platform at insect-scale with long range communication, self-releasing, and localization.

Sep. 2019 - Mar. 2020

Advised by Prof. Shyam Gollakota

UbiquiTouch: Self Sustaining Ubiquitous Touch Interfaces[\[link\]](#)

UBICOMP LAB, GEORGIA INSTITUTE OF TECHNOLOGY

- Designed a battery-free, low-cost, printable, wireless touch interface with ambient energy harvesting and backscatter communication

Nov. 2018 - Nov. 2019

Advised by Prof. Gregory Abowd and Prof. Thad Starner

BrainBaille: Towards Mobile Brain Computer Interface

CONTEXTUAL COMPUTING GROUP, GEORGIA INSTITUTE OF TECHNOLOGY

- Using fNIRS and fMRI based system to detect brain signal pattern, for activity recognition and silent communication(Braille).

Sep. 2018 - May. 2019

Advised by Prof. Thad Starner

Zero Energy Ubiquitous Sound Sensing Surface (ZEUSSS)[\[link\]](#)

UBICOMP LAB, GEORGIA INSTITUTE OF TECHNOLOGY

- Developed a flexible self-sustained system that consists of a TENG patch for acoustic sensing and analog backscatter for wireless communication.

Mar. 2018 - May. 2019

Advised by Prof. Gregory Abowd and Prof. Thad Starner

Anti-plagiarism Agent detecting Homework-for-hire[\[link\]](#)

CONTEXTUAL COMPUTING GROUP, GEORGIA INSTITUTE OF TECHNOLOGY

- Developed an artificial intelligence agent which will detect and combat the "homework for hire" based plagiarism

Jan. 2018 - Jan. 2019

Advised by Prof. Thad Starner

FingerPing: Recognizing fine-grained hand poses using active acoustic on-body sensing[\[link\]](#)

UBICOMP LAB, GEORGIA INSTITUTE OF TECHNOLOGY

- Designed an active acoustic sensing system for wearable interaction that recognizes different hand poses by the unique acoustic frequency response.

Mar. 2017 - Sep. 2017

Advised by Prof. Gregory Abowd

TV-Backscatter: Enabling ubiquitous ultra-low power communication [\[link\]](#)

CENTER FOR ENERGY-EFFICIENT COMPUTING AND APPLICATIONS, PEKING UNIVERSITY

- Developed a coin-size FPGA tag can communicate by reflecting ambient TV signals consuming only micro-watts power.

Dec. 2016 - Jun. 2017

Advised by Prof. Chenren Xu

Bioacoustics-based human body mediated communication[\[link\]](#)

UBICOMP LAB, GEORGIA INSTITUTE OF TECHNOLOGY

- Utilized the human body as a communication channel to enable natural human-device interactions and secure personal area network.

Sep. 2016 - Nov. 2016

Advised by Prof. Gregory Abowd

SoundTrak: Continuous 3D tracking of a finger using active acoustics[\[link\]](#)

UBICOMP LAB, GEORGIA INSTITUTE OF TECHNOLOGY

- Continuously tracking user's finger(speaker) with an array of microphones for gesture control, and 3D input.

Jul. 2016 - Nov. 2016

Advised by Prof. Gregory Abowd

Work Experience

Microsoft Research

RESEARCH INTERN

- Low-power communication for food supply chain.

Apple AI/ML

AI RESEARCH INTERN

Google Health Research and Innovation

STUDENT RESEARCHER

- Research and development on health sensing and daily health tracking using mobile sensors.

Bloomberg L.P. Machine Learning Text Analysis Team

MACHINE LEARNING SOFTWARE ENGINEER

- Sentiment analysis on earnings call transcript data based on supervised machine learning and NLP.

Jun. 2022 - Sep. 2022

Mentored by Bodhi Priyantha, Vaishnavi Ranganathan, Raveer Chandra

Jun. 2021 - Sep. 2021

Mentored by Saman Naderiparizi

Jun. 2020 - Mar. 2021

Mentored by D. Shin, Mark Malhotra

May. 2018 - Jul. 2018

Mentored by Karan Uppal, Temma Choji, Vika Abrecht

Publications

LuckyChirp: Opportunistic Respiration Sensing Using Cascaded Sonar on Commodity Devices

[\[link\]](#)

QIU YUE XUE, D SHIN, ANUPAM PATHAK, JAKE GARRISON, JONATHAN HSU, MARK MALHOTRA, SHWETAK PATEL

IEEE Percom

2022

Airdropping Sensor Networks from Drones and Insects [\[link\]](#)

QIU YUE XUE*, VIKRAM IYER*, MARUCHI KIM*, ANRAN WANG, SHYAM GOLLAKOTA

ACM Mobicom

2020

UbiquiTouch: Self Sustaining Ubiquitous Touch Interfaces [\[link\]](#)

ANANDGHAN WAGHMARE, QIU YUE XUE, DINGTIAN ZHANG, YUHUI ZHAO, SHIVAN MITTAL, NIVEDITA ARORA, CEARA BYRNE, THAD E. STARNER, GREGORY D. ABOWD

ACM IMWUT

2020

Jack Watson: Addressing Contract Cheating at Scale in Online Computer Science

[Education](#) [\[link\]](#)

ROCKO GRAZIANO, DAVID BENTON, SARTHAK WAHAL, QIU YUE XUE, P. TIM MILLER, NICK LARSEN, DIEGO VACANTI, PEPPER MILLER, KHUSHHALL CHANDRA MAHAJAN, DEEPAK SRIKANTH, THAD STARNER

ACM Learning @ Scale

2019

FingerPing: Recognizing fine-grained hand poses using active acoustic on-body sensing [\[link\]](#)

CHENG ZHANG, QIU YUE XUE, ANANDGHAN WAGHMARE, RUICHENG MENG, SUMEET JAIN, YIZENG HAN, XINYU LI, KENNETH CUNEFARE, THOMAS PLOETZ, THAD STARNER, OMER INAN, GREGORY ABOWD

ACM CHI

2018

SoundTrak: Continuous 3D tracking of a finger using active acoustics [\[link\]](#)

CHENG ZHANG, QIU YUE XUE, ANANDGHAN WAGHMARE, SUMEET JAIN, YIMING PU, JORDAN CONANT, SINAN HERSEK, KENT LYONS, KENNETH CUNEFARE, OMER INAN, GREGORY ABOWD

ACM IMWUT

2017

Bioacoustics-based human body mediated communication [\[link\]](#)

CHENG ZHANG, SINAN HERSEK, YIMING PU, DANRUI SUN, QIU YUE XUE, THAD STARNER, GREGORY ABOWD, OMER INAN

IEEE Computer

2017

Patents

Optical Accessory to Add Touch Capability to a Non-touchscreen Device

D SHIN, SHIRLEY XUE

2020

Systems, Methods and Devices for Gesture Recognition [\[link\]](#)

CHENG ZHANG, QIU YUE XUE, ANANDGHAN WAGHMARE, SUMEET JAIN, YIMING PU, KENNETH CUNEFARE, OMER INAN, GREGORY ABOWD

WO 2019/051082 A1

2019

A thin and flexible self-powered vibration transducer employing triboelectric nanogeneration

[\[link\]](#)

NIVEDITA ARORA, DIEGO OSORIO, QIU YUE XUE, DHARUVA BANSAL, PETER MCAUGHAN, SEYEDEH FERESHTEH SHAHMIRI, STEVEN L. ZHANG, MOHIT GUPTA, YI-CHENG WANG, ZHENGJUN WANG, ZHONG LIN WANG, THAD E. STARNER, GREGORY D. ABOWD

US 2019/0373375 A1

2019

Academic Services

Paper Reviewer IMWUT, CHI, UIST, ICM

Teaching Assistant Embedded Capstone (UW) 2022 Fall, Artificial Intelligence (Georgia Tech) 2019 Spring

Student Volunteer UIST'22, Ubicomp'17