

Runze Liu

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EDUCATION

Pennsylvania State University	2022 - Present
• Ph.D. in Computer Science	
Case Western Reserve University	2020 - 2022
• M.S. in Computer Engineering	Course-Focused Track
University of California, Irvine	2016 - 2020
• B.S. in Computer Science	Intelligent System Specialization

Area of Interest

Specialization:

Wearable Devices, Internet-of-Things, Digital Health, Sport Analytics, Human-Computer Interaction, Machine Learning.

Skills:

Software: C/C++, Python, Java, Machine Learning, Signal Processing, Computer Vision, Linux

Hardware: Embedded Systems (Arduino, ESP32, NRF5x Series etc.), EAGLE PCB, FPGA, VHDL

Mechanical: SOLIDOWRKS, Additive Manufacturing.

PROFESSIONAL EXPERIENCE

VivoMetria LLC.	May 2025-Aug 2025
<i>Hardware Intern</i>	
Karpos Cultivation LLC.	Dec 2020-Aug 2022
<i>Co-Founder & Lead Hardware Engineer</i>	

PUBLICATIONS

SmartDampener: An Open Source Platform for Sport Analytics in Tennis

Runze Liu, Taiting Lu, Shengming Yuan, Hao Zhou, Mahanth Gowda ACM IMWUT/UbiComp, 2024

Demonstration of VisRing: A Display-Extended Smartring for Nano Visualizations

Runze Liu, Christian Krauter, Taiting Lu, Mara Schulte, Alexander Achberger, Tanja Blascheck, Michael Sedlmair, Mahanth Gowda ACM UIST Adjunct, 2025

VisRing: A Display-Extended Smartring for Nano Visualizations

Taiting Lu, Christian Krauter, **Runze Liu**, Mara Schulte, Alexander Achberger, Tanja Blascheck, Michael Sedlmair, Mahanth Gowda ACM UIST, 2025

FuSenseRing: An Open-Source Platform for Robust Cuffless Blood Pressure Monitoring via Multimodal Sensor Fusion and Temperature-Adaptive Attention

Zhenghao Li, Taiting Lu, **Runze Liu**, Shengming Yuan, Jigar Gosalia, Christine Bowlus, David Proctor, James Pawelczyk, Yincheng Jin, Mahanth Gowda ACM UIST, 2025

One Ring to Rule Them All: An Open Source Smartring Platform for Finger Motion Analytics and Healthcare Applications

Hao Zhou, Taiting Lu, Yilin Liu, Shijia Zhang, **Runze Liu**, Mahanth Gowda. ACM/IEEE IoTDI, 2023

I am an Earphone and I can Hear my Users Face: Facial Landmark Tracking using Smart Earphones
Shijia Zhang, Taiting Lu, Hao Zhou, Yilin Liu, **Runze Liu**, Mahanth Gowda ACM TIOT, 2023

LMM4-IC8K: A Large Multimodal Model Powered Integrated Circuit Footprint Geometry Understanding
Yida Wang, Taiting Lu, **Runze Liu**, Lanqing Yang, Zhe Chen, Yuehai Wang, Yixin Liu, Kaiyuan Lin,
XiaoMeng Chen, Dian Ding, Yijie Li, Yifan Yang, Yi-Chao Chen, Yincheng Jin, Mahanth Gowda ICML 2026

A Large Language Model Powered Integrated Circuit Footprint Geometry Understanding
Yida Wang, Taiting Lu, **Runze Liu**, Lanqing Yang, Yifan Yang, Zhe Chen, Yuehai Wang,
Yixin Liu, Kaiyuan Lin, Xiaomeng Chen, Dian Ding, Yijie Li, Yi-Chao Chen, Yincheng Jin,
Mahanth Gowda Arxiv (Preprint)

ACTIVITIES AND REWARDS

NSF National I-Corps Program
Cohort 3 Winter 2026

I-Corps Mid-Atlantic Regional Program
Recommended to National Program Fall 2024

IoTDI
Best Paper Award for Edge IoT 2023

PATENT

APPARATUS, PROCESS AND PLATFORM FOR ACTIVITY ANALYSIS (Provisional Coversheet Filed)
Co-Inventor U.S. Prov. Pat. App. No. 63/688,633

PLATFORM FOR FINGER MOTION ANALYTICS AND HEALTHCARE APPLICATIONS
Co-Inventor WO2024/233526

AUTOMATIC HEATING AND TEMPERATURE-CONTROLLED INSULATED BOTTLE
Inventor ZL2015/2/0187057.7

MENTORED STUDENTS

Yixi Wang
Undergraduate, Pennsylvania State University 2025-

Hsueh-hung Cheng
Undergraduate, Pennsylvania State University 2025-

Shengming Yuan
Undergraduate, Pennsylvania State University 2023-2024