Ann Arbor, Michigan
tkroliko@umich.edu

Tom Krolikowski

Website: tomkrolikowski.dev
github.com/tomkrolikowski
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Education

Ph.D. Computer Science and Engineering, *University of Michigan*, *GPA: 3.816* Aug 2022 — Present
Advisor: Alanson Sample
B.S.E. in Computer Engineering, *University of Michigan*, *Summa Cum Laude*, *GPA: 3.913* Jan 2020 — Apr 2022

Work Experience

Graduate Student Research Assistant **May 2022 — Aug 2022**
Interactive Sensing and Computing Lab *Ann Arbor, Michigan*

- Developed an accessibility proxy that improves motor impaired users interactions with touchscreen kiosks.
- Improved and developed computer vision software for a privacy-preserving camera.

Software Development Engineer Intern **Jun 2021 — Aug 2021**
Amazon Web Services *Seattle, Washington*

- Implemented an SQS Poller Lambda application, allowing the team to remove the existing code from the main application. Overall improving time complexity and reducing costs by using serverless AWS Lambda functions.
- Used reserved concurrency to increase the application speed, overall processing 6 million SQS queue messages in 15 minutes.
- Created unit tests and integration tests to evaluate the functionality of the application before deploying it to production

Toyotetsu North America **Aug 2017 — Jan 2020**
Design Engineer *Northville, Michigan*

- Responsible for coordination between engineering and manufacturing for value added projects that include: waste reduction, material changes, design changes, or system changes.
- Review, evaluate, and execute product changes to meet new requirements, improve performance, quality or cost reduction.
- Responsible for negotiating design change requests, schedules, stamping processes, and blank sizes with Toyota during the design phase.

Conti Fire Protection **Mar 2016 — Aug 2017**
Fire Protection Design Engineer *Sterling Heights, Michigan*

- Designed and fabricated numerous systems including wet systems, dry systems, and high hazard industrial systems.
- Analyzed water flow using hydraulic calculations to accurately model the velocity and pressure required to extinguish a fire.
- Pioneered a new method of 3D modeling mechanical rooms to increase productivity in labor and reduce material costs.

Publications

1. Chen Liang, Yasha Iravantchi, **Thomas Krolikowski**, Ruijie Geng, Alanson P. Sample, Anhong Guo BrushLens: Hardware Interaction Proxies for Accessible Touchscreen Interface Actuation UIST '23: Proceedings of the 35th Annual ACM Symposium on User Interface Software and Technology.

Publications in Review

1. **Thomas Krolikowski**, Yasha Iravantchi, Eric Whitmire, Alanson P. Sample. UltraTouch: Touch Interaction Detection via On-body Ultrasonic Reflectometry. CHI '24: Proceedings of the 2024 CHI Conference on Human Factors in Computing Systems.

2. Yasha Iravantchi, **Thomas Krolikowski**, William Wang, Kang G. Shin, Alanson P. Sample. PrivacyLens: A Hybrid RGB+Thermal Camera for Privacy Preserved Human-Centered Applications. Proceedings of the ACM on Interactive, Mobile, Wearable and Ubiquitous Technologies.

Fellowships & Awards

Rackham Merit Fellowship **Aug 2022**
The Rackham Merit Fellowship (RMF) Program helps sustain the academic excellence and inclusiveness of the Michigan graduate community, one that embraces students with diverse experiences and goals, and who come from many educational, cultural, geographic, and familial backgrounds.

Michigan Institution for Computational Discovery and Engineering **Aug 2022**
The MICDE fellowship is offered to current and prospective students whose research project involves the use and advancement of scientific computing techniques and practices.

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Teaching Experience

Girls in Science and Engineering (WISE GISE) **Jun 2023**
Instructor

- Lectured on the fundamentals of acoustic waves and their applications in various research areas such as Human-Computer Interaction and Robotics.

AI4ALL **Jul 2022**
Project Instructor

- Taught a two week crash course on the fundamentals of programming and computer vision techniques high school students and worked with them to develop a virtual green screen final project.

References

Alanson Sample
Associate Professor in Electrical Engineering and Computer Science
Interactive, Sensing and Computing Lab, University of Michigan
apsample@umich.edu

Ronald Dreslinski
Associate Professor in Electrical Engineering and Computer Science
Circuits and Architecture Design Research group, University of Michigan
rdreslin@umich.edu

Skills

Programming Languages	C/C++, Python, Java, LaTeX, ARM Assembly, System Verilog, JavaScript, CSS, HTML
Toolkits	MATLAB, Simulink, Stateflow, NumPy, SciPy, PyTorch, OpenCV, SciKit-Learn, Fusion 360, Altium