Farshid Salemi Parizi

I am a Ph.D. student at the University of Washington, advised by Shwetak Patel in the Ubiquitous Computing (UbiComp) lab. My research focuses on many areas of ubiquitous computing including designing novel wireless sensing and monitoring solutions for energy sustainability and building novel input solutions and adaptive interfaces in virtual and augmented reality which enhance existing sensors in the environment. Specifically, I am interested in enabling high precision and low-cost sensing and tracking on everyday objects. Using my diverse skillset in signal processing, embedded system design, physical prototyping, and analog hardware design, I am always interested in tackling the most challenging research questions in human computer interaction.

PhD Candidate
Department of Electrical and Computing Engineering
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WEBSITE

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EDUCATION

PhD 2016 - Current	Electrical and Computer Engineering, University of Washington Advisor: Shwetak Patel
Master of Science 2016 – 2019	Electrical and Computer Engineering, University of Washington Advisor: Shwetak Patel
Bachelor of Science 2012 - 2016	Electrical Engineering with Honor, Sharif University of Technology Advisor: Ali Fotowat

HONORS & AWARDS

2016 Best Paper Nominee at IEEE RFID 2016 for *µMonitor*
2016 Awarded for the best B.Sc. thesis among all Electrical Engineering students
2014 Ranked 3rd in the 3rd Sharif Cup Open Robotics competition in computer vision

Employment

2016 - Current	Ubiquitous Computing Laboratory , University of Washington, Seattle, WA Research Assistant
June - Sep 2020	Microsoft Research, Redmond, WA Research Intern, Conducted research on novel input solutions for VR/AR
June - December 2019	Facebook Reality Labs, Redmond, WA Research Intern, Conducted research on novel input solutions for VR/AR
Sep 2018 – Dec 2018	Limit Inc., Newport Beach, CA Research Intern, Designing a non-invasive toilet overflow preventer.
April - June 2018	Limit Inc., Newport Beach, CA Research Intern, Designing a non-invasive toilet overflow preventer.
June 2017 – Jan 2018	Limit Inc., Newport Beach, CA Research Intern, Designing a non-invasive toilet overflow preventer.

PEER-REVIEWED PUBLICATIONS

P5 *AURARING: PRECISE ELECTROMAGNETIC FINGER TRACKING*
Farshid Salemi Parizi*, Eric Whitmire*, Shwetak Patel
(*Co-primary authors)
Proceedings of the ACM on Interactive, Mobile, Wearable and Ubiquitous Technologies (IMWUT), 2019.

P4 *AURA: INSIDE-OUT ELECTROMAGNETIC CONTROLLER TRACKING*
Farshid Salemi Parizi*, Eric Whitmire*, Shwetak Patel
(*Co-primary authors)
17th ACM International Conference on Mobile Systems, Applications, and Services (MobiSys), 2019

P3 *RoyalFlush: Non-invasive Water Level Monitoring to Prevent Toilet Overflows*
Farshid Salemi Parizi, Josh Fromm, Shantanu Deshpande, Shwetak Patel
Proceedings of the ACM 8th International Conference on the Internet of Things (IoT), *2018*

P2 *CapHarvester: A Stick-on Capacitive Energy Harvesting Using Stray Electric Field*
Farshid Salemi Parizi*, Manoj Gulati* **,** Eric Whitmire, Sidhant Gupta, Shobha Sundar Ram, Amarjeet Singh, Shwetak Patel
(*Co-primary authors)
Proceedings of the ACM on Interactive, Mobile, Wearable and Ubiquitous Technologies (IMWUT), 2018

P1 *µMonitor: In-situ Energy Monitoring with Microwatt Power Consumption*
Saman Naderiparizi, Aaron N.Parks, **Farshid Salemi Parizi**, Joshua R.Smith
IEEE RFID 2016 Best Paper Nominee (Top 3 papers)

PUBLISHED PATENTS

P1 *Toilet Overflow Prevention Systems and Method*
Farshid Salemi Parizi, Josh Fromm
US Patent US20180371734A1

PUBLISHED DEMOS

D2 *Demo Abstract: Continuous Micro Finger Writing Recognition with a Commodity Smartwatch*
Wenqiang Chen, Lin Chen, Meiyi Ma, **Farshid Salemi Parizi**, Patel Shwetak, John Stankovic
The 18th ACM Conference on Embedded Networked Sensor Systems (SenSys), 2020

D1 *Demo of AuraRing: Precise Electromagnetic Finger Tracking*
Farshid Salemi Parizi, Eric Whitmire, Alvin Cao, Tianke Li, Shwetak Patel
32nd ACM Symposium on User Interface Software and Technology (UIST), *2019*

ADVISING AND MENTORING

Masters Students
Alvin Cao (Fall 2017 – 2018) – Research on doing interaction with everyday objects using RFID

Shatanu Deshpande(Fall 2017-2018)- Research on designing a non-invasive toilet overflow preventer

Undergraduate Students	Arshana Jain (Fall 2017) – UW CSE Undergrad's Program
High School Students	Maxwell Scheafer (Summer 2018), Arshana Jain (Summer 2017) Marcus Amal (Summer 2017), Rishma Murugan (Summer 2017)

TEACHING EXPERIENCE

University of Washington	CSE 475, Embedded Systems Capstone (Lead Lab Assistant for Shwetak Patel) EE 371, Design of Digital Circuits and Systems (Lead Lab Assistant for Allan Ecker)

SKILLS

Hardware	From scratch Embedded System Development, Digital and Analog Circuits Design, Energy Harvesting, RF circuit design, Signal Processing, Capacitive Sensing Systems, FPGAs, Verilog, PCB design, 3d modeling using Solidworks.
Software	C/C++/C#, JAVA, Android, Python, Matlab, Machine Learning, Discrete and Continuous Signal Processing

SERVICE

Reviewer	CHI 2021, 2020. IMWUT 2021, 2020, 2019. UIST 2020, 2019. ISS 2020. ISWC 2019. IEEE VR 2019.
Outreach	UW Ubicomp Lab Industry Affiliation Demo Lead: 2017 - Present UW Ubicomp Lab High School Mentorship Program: 2017 – Present Presentation to Washington state legislators about research in computer science and electrical engineering: 2017 UW College of Engineering Discovery Days 2017

REFERENCES

Shwetak Patel	shwetak@cs.washington.edu
Joshua R. Smith	jrs@cs.washington.edu
Wolf Kienzle	wkienzle@fb.com
Hrvoje Benko	benko@fb.com