

Sarang Joshi

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Education

Doctor of Philosophy, University of Chicago

Sep 2023 – Present

- Research Interests: Quantum Computing, Computer Systems and Architecture, CS Education, Sustainable Computing
- Advised by: Fred Chong, Diana Franklin
- Daniels Fellow, 2023-24

Bachelor of Science, University of Washington Seattle

Sep 2014 – Jun 2018

- Honors: Graduated cum laude (3.81/4.0 GPA), CSE Departmental Honors
- Highlighted Classes: Hardware/Software Interface, Operating Systems, Distributed Systems, Networks, Quantum Mechanics I + II

Research

Publications

- Joshua Visslai, Jason D. Chadwick, Sarang Joshi, Gokul Subramanian Ravi, Yanjing Li, and Frederic T. Chong. 2025. "SWIPER: Minimizing Fault-Tolerant Quantum Program Latency via Speculative Window Decoding." In *Proceedings of the 52nd Annual International Symposium on Computer Architecture (ISCA '25)*. Association for Computing Machinery, New York, NY, USA, 1386–1401. DOI: <https://doi-org.proxy.uchicago.edu/10.1145/3695053.3731022>
- Max Willsey, Ashley P. Stephenson, Chris Takahashi, Pranav Vaid, Bichlien H. Nguyen, Michal Piszczek, Christine Betts, Sharon Newman, Sarang Joshi, Karin Strauss, and Luis Ceze. 2019. "Puddle: A Dynamic, Error-Correcting, Full-Stack Microfluidics Platform." In *Proceedings of the Twenty-Fourth International Conference on Architectural Support for Programming Languages and Operating Systems (ASPLOS '19)*. Association for Computing Machinery, New York, NY, USA, 183–197. DOI: <https://doi.org/10.1145/3297858.3304027>

Prior Research Experience

Research Assistant at UChicago Large Scale Sustainable Systems Group Jan 2024 – Jun 2024

- Adviser: Andrew Chien
- Worked on designing a dynamic data center cooling system model for the RIKEN supercomputer

Research Assistant at UW Molecular Information Systems Lab

Sep 2017 – Jun 2018

- Adviser: Luis Ceze; Mentor: Max Willsey
- Designed a multi-drop management system for UW MISL's PurpleDrop/Puddle microfluidics system for senior research project
- Dept. Honors Senior Thesis and Presentation: "Multi-Location Droplet Management for Digital Microfluidics" (<https://sarangi.com/papers/uw-thesis.pdf>)

Research Assistant at UW Computer Systems Lab

Sep 2017 – Dec 2017

- Adviser: Tom Anderson
- Assisted with the development and improvement of xk, an educational operating system used in the undergraduate OS course

Work Experience

Staff Engineer at Illumio

Aug 2018 – Aug 2023

- Designed and developed a lightweight cross-platform (Linux, Windows, macOS, and Unix) software agent in C++ that secured the workload using the system firewall
- Helped in developing and improving the Containerized VEN to work in containerized environments with Docker, Kubernetes, OpenShift, etc.
- Worked on the end-to-end build and testing infrastructure for the VEN
- Trained and mentored 4-5 engineers (interns, new college graduates, and new hires), and conducted presentations, TOI's, and Q&A sessions with the rest of the company and our customers

SDE Intern at Arista Networks

Jun – Sep 2017

- Added functionality to cEOS, the containerized version of EOS, the core operating system for Arista switches

SDE Intern at Cisco, Inc.

Jun – Sep 2016

- Full-stack developer for end-to-end integration of Outlook calendar services with Cisco Spark Web frontend

Project Lead Intern at Rinworks, LLC

Jun – Sep 2015

- Built software library to directly communicate with 3D printers, cameras, and Arduino as parts of the Computerized Imaging Rig
- Presented at the Seattle Mini Maker Faire (Sep 19-20)

Teaching Experience

UChicago CS Teaching Assistant

Sep 2023 – Present

- Courses taught: Intro to Systems II

Microsoft TEALS Volunteer Teacher

Sep 2021 – May 2022

A program dedicated to building equitable, inclusive computer science programs in high schools

- Taught a year-long course on Snap and Python to a class of 30 online in Houston, TX. Worked alongside in-person teacher to help her gain comfort with computer science education
- Customized and provided feedback for the TEALS-stipulated curriculum for future improvements

UW CSE Teaching Assistant

Mar 2015 – Jun 2018

- Taught across 10 quarters with class size of 20-30, organized section and designed class materials, developed new curriculum to aid with in-house assignment set
- Developed “[Heap Simulator](#)” for Hardware/Software Interface class that was incorporated into class curriculum for future quarters
- Courses taught: Distributed Systems, Operating Systems (3 quarters), Foundations of Computing I, Hardware/Software Interface (3 quarters), Intro to Computer Science II (2 quarters)
- Awards: Bob Bandes Memorial Award for Teaching (Honorable Mention)

Leadership Experience

Kinspire

A 501(c)(3) non-profit dedicated to helping educational aspirations of children in orphanages in India.

- Vice-President/Co-Executive Director
Jun 2016 – Present
 - Oversee all operations of the organization, liaise with representatives and contacts in the US and India, organize events and programs, expand volunteer base to 4 branches across the US, expand Kinspire's efforts to 3 childcare institutions, lead the creation and curation of specialized curricula
- Website Developer
Sep 2015 – Jun 2016
 - Complete redesign and reengineering of website from scratch, using PHP and SQL

Ekta

Online platform to unify South-Asian performing arts circuits across the US.

- Co-Founder, CTO
Sep 2019 – Present
 - Designed and developed full-stack web app for a common application and data collection across 5 collegiate circuits supporting 4000+ users

Association of South-Asian A cappella

A 501(c)(3) non-profit dedicated to the development of the South-Asian a cappella genre.

- Advisor Jun 2021 – Sep 2023
- Co-Director Jun 2019 – Jun 2021
 - Oversaw expansion of the South-Asian a cappella collegiate circuit to 75+ teams, designed and executed full-virtual circuit after COVID-19 pandemic, grew ASA board to 15 members.
- Technology and Development Chair Sep 2018 – Jun 2019
 - Developed online resources for teams and competitions to help with the competing season, and performing and producing music.

UW Awaaz

University of Washington's premiere South-Asian a cappella team.

- Musical Director Sep 2016 – Jun 2018
 - In charge of overseeing all musical pieces for the year, leading practices, organizing musical arrangements, coordinating and assisting various other parts of the team, representing the team in the local community. Recorded and published two full-length albums.
- Public Relations Officer Sep 2015 – Jun 2016

Technical Skills

Languages

- C/C++17, Golang, Bash, Python, Powershell, Java 8+, Typescript/JavaScript, PHP, Ruby, C#, HTML5, CSS/LESS, SQL

Libraries/Subsystems

- Netfilter/IPTables/NFTables, Linux Kernel, eBPF, Containers, Kubernetes, systemd, Windows Filtering Platform, .NET
- NodeJS, ReactJS, MongoDB, Express Firebase, Arduino, XNA Game Studio, .NET, Microsoft Kinect, jQuery, D3 JS, Processing, OpenCV

Platforms

- Linux (CentOS, Red Hat, Ubuntu), Windows, Solaris, AIX, macOS

Tools

- CMake, Git, Jenkins, GoogleTest, GCOV, GCC compiler toolkit