Millan Philipose

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Education

University of Washington — Seattle, WA
Master of Science in Computer Science — *Sep. 2024 – Jun. 2025 (expected)*

University of Washington — Seattle, WA
Bachelor of Science in Computer Science and Mathematics. GPA: 4.0. — *Sep. 2020 – Jun. 2024 (expected)*

Relevant Experience

Research Intern — Jan. 2021 – June 2021
Microsoft — *Redmond, WA*

Co-designed and built a novel distributed system to demodulate radio signal on the cloud, with low latency and extremely high throughput. Resulted in publication.

- Dockerized the GNURadio C++ package, shifting signal processing from hardware to the cloud for the first time.
- Increased throughput by 1000x using horizontally-scaling Azure Functions and a Redis cache.
- Implemented a novel radio demodulation algorithm in the cloud system, for a 10x increase in network capacity.
- Published in SIGCOMM, the top communications conference, as second author.

Software Engineering Intern — June 2019 – Sep. 2019
Microsoft — *Redmond, WA*

Developed a full-stack system to improve access to information on public transportation. Resulted in prototype deployment on a busy Seattle bus route, authorized by transit authority CXO.

- Built a sensor data processing backend using Azure Functions in Typescript and a distributed Redis cache.
- Adapted the OneBusAway Android app to display bike rack availability data.
- Built a service to convert proprietary CCTV footage to a universal format, over 100x faster than existing tools.
- Tuned a PyTorch computer vision model to obtain passenger counts from station footage. Achieved 95% accuracy.
- Manager, Sreekanth Kannepalli, writes: "Millan is the smartest intern I have hired during my time at Microsoft."

Other Experience

Undergraduate Research Assistant — June 2022 – Present
University of Washington — *Seattle, WA*

- Leading investigation into the theory of generalization in deep neural networks.
- Running 20+ GPU-accelerated experiments using the Jax framework to characterize the behavior of gradient descent on CV and NLP models. Analyzing the connection between step size and higher-order derivatives.

Student Voices Contributor — Apr. 2018 – Nov. 2018
Seattle Times — *Seattle, WA*

- Published an op-ed on gifted education in Seattle. One of 12 students selected by the Times from across the state.

Projects

SPS Gradegrubber | *HTML, CSS, JS*

A Chrome extension adding features to the Seattle Public Schools gradebook, including a what-if analysis tool for individual scores, a weighted GPA calculator, and intelligent highlighting of the most important assignments.

- Gained 211 users at 5 schools over a span of 4 months, entirely on word of mouth.
- Perfect 5-star rating average on the Chrome Web Store.

Publications

M. Shahid, M. Philipose, K. Chintalapudi, S. Banerjee and B. Krishnaswamy.
"Concurrent Interference Cancellation: Decoding Multi-Packet Collisions in LoRa," *SIGCOMM 2021.*

Technical Skills

Languages: Java, Python, C/C++, JavaScript, TypeScript, SQL, HTML/CSS
Tools and Frameworks: AWS, Azure, Redis, React, Node.js, Angular, Django, Django Rest Framework, PyTorch