

Sunjay Varma

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Work Experience

Amazon Web Services (AWS) - aws.amazon.com

San Francisco, CA (remote)

Software Development Engineer (SDE) II

May 2023 - present

Software Development Engineer (SDE) I

Oct 2020 - Apr 2023

- Contributes to dataplane for a scalable, low-latency programmable packet processor (130k+ lines of Rust code)
- Acts as team Rust expert, using 7+ years of Rust experience to mentor both junior and senior developers on various Rust concepts, such as ownership, borrowing, memory safety, and unsafe Rust
- Led team of self and two other engineers to develop a compiler and static analysis engine written in Rust to verify memory safety and guarantee termination of user-provided eBPF packet processing programs
- Designed static analysis engine from the ground up to generate clear and detailed error messages by storing precise analysis state about each program, significantly improving user experience when an error is found
- Automated a tedious manual debugging process by creating a Python tool that captures packets on hundreds of hosts while minimizing risk by limiting captures to small batches and monitoring metrics throughout
- Eliminated user data security risk by creating a packet parser that intelligently strips out sensitive customer data from all captured packets while leaving data necessary for debugging untouched
- Regularly took on 7-day long 24/7 on-call shifts to resolve time-sensitive customer issues, including leading one 12+ hour call where critical customer audit data was slowly moved off of dozens of failed hosts overnight
- Promoted to SDE II in Apr 2023 with the highest performance evaluation: Exceeds High Bar

Education

University of Waterloo, Bachelor of Software Engineering, Honors - Co-operative Program (With Distinction)

Graduation Year: 2020

- **Work Experience:** Worked across the industry from 2013-2019 in numerous software developer and research part-time jobs and internships to gain a wide range of experience, pay tuition, and financially support myself
- **Public Speaking:** Presented about the Rust programming language at conferences around the US and Canada and taught Rust and game development to dozens of people at conference workshops around the world

Skills, Technologies, & Environments

- *Extensive Experience:* Rust, Python, C, JavaScript, Node.js, HTML, CSS, Windows, MacOS, Linux, Git, Compilers
- *Moderate Experience:* C++, Bash, React.js, Network Programming
- *Limited Experience (in college):* C#, Haskell, Idris, Coq, MATLAB, SQL

Internship, Co-op, and Part-time Contracting Work Experience (2013-2019)

In Canada, a "co-op" job requires students to complete the full responsibilities of a regular full-time employee for a 4 or 8 month period, much like a short contract position.

- **Computer Graphics C++ Developer, SideFX Software** - sidefx.com Toronto, ON, Sep - Dec 2019 (Co-op)
- **Senior Research C++ Software Developer, Formal Methods Group** - watform.uwaterloo.ca
Waterloo, ON, Jan - Apr 2019 (Co-op)
- **Rust Compiler Research Engineer, Mozilla** - rust-lang.org San Francisco, CA, May - July 2018 (Internship)
- **C/C++ Compiler Research Assistant, Programming Languages Group** - cforall.uwaterloo.ca
Waterloo, ON, Sep 2017 - Dec 2018 (Part-time)
- **Python Machine Learning Research Assistant, Computational Health Lab** - chil.uwaterloo.ca
Waterloo, ON, Sep 2016 - Sep 2017 (Part-time)
- **React JS Web Developer, Konrad Group** - konradgroup.com Toronto, ON, Jan - Dec 2016 (Co-op/Part-time)
- **Lead Software Architect, anyWare** - janetingley.com/anyware Waterloo, ON, May - Aug 2015 (Co-op)
- **Intermediate Web Developer, SMART Technologies** - smarttech.com Calgary, AB, Sep - Dec 2014 (Co-op)
- **Web Developer, SMART Technologies** - smarttech.com Calgary, AB, Jan - Apr 2014 (Co-op)
- **Django & jQuery Web Developer, Clinic Sense** - clinicsense.com Toronto, ON, Jul 2013 - Oct 2014 (Part-time)

Speaking Engagements

- **Introduction to Rust Game Development Workshop**
Mar 2019 - Rust LATAM - Montevideo, Uruguay
Aug 2019 - RustConf - Portland, OR, USA
Sep 2019 - Colorado Gold Rust - Denver, CO, USA
- **Writing Rust Packages Used By Complete Beginners (A Tour of Turtle)** - youtu.be/ZtER1Wlbeo
Sep 2018 - RustConf 2018 - Portland, OR, USA
- **Coherence in Chalk (The Rust Compiler Trait System Implementation)** - youtu.be/rZqS4bLPL24
Jul 2018 - Bay Area Rust Meetup - San Francisco, CA, USA
- **An Introduction to Rust** - youtu.be/bG-qnPj-AeY
Mar 2018 - Rust KW Meetup - Kitchener, ON, Canada
- **RustBridge Workshop: An Introduction to Rust** - rustbridge.com
Mar 2018 - RustBridge Waterloo - Waterloo, ON, Canada
- **How Rust Makes Advanced Type Systems Accessible to the Masses** - youtu.be/P0L3gnO-3IM
Jan 2018 - StarCon 2018 - Waterloo, ON, Canada