

Samarth Kishor

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EXPERIENCE

Amazon Web Services

August 2022 – Present

Applied Scientist

Arlington, VA

- Co-authored a paper and patent application for a technique to apply static analyses to automatically scale the verification of real-world security protocol implementations. Implemented the technique on a 100k+ LoC Go codebase.
- Designed and implemented static analyses (program slicing, information flow, constrained mutability) to verify security properties for the SSM Agent Go codebase deployed on millions of hosts.
- Led the verification of safety and liveness properties of a distributed protocol used for authorization by the majority of services at AWS via first-order logic modeling (Ivy) as well as bounded model-checking (P).

Amazon Web Services

July 2021 – August 2022

Software Development Engineer

Arlington, VA

- Mentored new hires and interns in Go programming, compilers, and advanced testing techniques.
- Wrote an end-to-end data transformation compiler in Go for a JSON-like language used to transfer terabytes of customer data per day. Rigorously demonstrated the correctness of the implementation with property-based testing.
- Simplified the design of a concurrent process manager in Go to eliminate all known data races.

Amazon Web Services

May 2020 – August 2020

Software Development Engineer Intern

Arlington, VA

- Extended an existing customer-facing AWS service by implementing a new serverless component in Python using Lambda, S3, and Dynamo.
- Service made heavy use of concurrency and parallelism to save customers time and compute resources, and improved the performance of the existing process by over 200%.

EDUCATION

University of Virginia

August 2027 – May 2021

B.A. Computer Science, Technology Entrepreneurship Minor

Charlottesville, VA

- **TA Experience:** Programming Languages (Head TA), Theory of Computation, Discrete Mathematics

PROJECTS

OCamLox

January 2020 – April 2020

<https://github.com/samarthkishor/crafting-interpreters>

Personal Project

- Implemented an interpreter for a JavaScript-like programming language from the book *Crafting Interpreters*.
- The interpreter consists of a hand-rolled recursive-descent parser and tree-walking evaluator written in OCaml.

TriTag

September 2018

<https://devpost.com/software/tritag>

MedHacks

- Group won a Top Ten in Category Award out of hundreds of participants.
- Created a modern, digital approach to Triage involving an iPad app and an Arduino-based identifier.

LEADERSHIP

HooHacks

Fall 2018 – Current

External Relations Committee Co-Chair (Elected Position)

Charlottesville, VA

- Raised over \$15,000 for the 2020 hackathon by working directly with sponsors such as Capital One and CoStar.
- Coordinated workshops for 50+ students and served as a point-of-contact for sponsors during the 2019 hackathon.

University Salsa Club

Fall 2017 – Current

Choreographer

Charlottesville, VA

- Choreographed dances for the Fall 2018 and Spring 2020 Salsa Showcase.
- Performed for events in the Charlottesville community such as the Virginia Film Festival and Pancakes for Parkinson's.

SKILLS

Programming Languages

Fluent: Go, Python, Java *Proficient:* JavaScript, OCaml *Familiar:* Rust, Prolog

Tools & Technologies

Automated Reasoning (Static analysis, P, Ivy), AWS, Redis, GNU/Linux

Human Languages

Fluent: English *Proficient:* Spanish, Japanese *Familiar:* Hindi, Urdu