

# Tarun Murali

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## Education

### University of Maryland

B.S. in Computer Science, Minors in Cybersecurity (Honors) and Statistics

College Park, MD

Aug 2020 – May 2024

- **Computer Science:** Computer Vision, Operating Systems, Networks, Compilers, Penetration Testing, Parallel Computing
- **Math:** Cryptography, Algorithms, Abstract Algebra, Linear Algebra, Statistics I/II, Calculus

## Experience

### ModoView LLC

Founding Software Engineer

Jun 2025 – Present

Washington, D.C.

- Built AI interview platform with **Next.js**, **Firebase**, and **Vapi** APIs, automating candidate assessments
- Delivered actionable hiring insights via analytics dashboard tracking speech patterns, video feed, and accuracy

### CoStar Group

Software Engineer

Jul 2024 – May 2025

Washington, D.C.

- Built a high-throughput secrets management service with automated failover, ensuring zero downtime for 10+ teams.
- Cut infra costs 5× with a **Python** proxy API that caches secrets and optimizes fetches by developer access patterns.
- Created an authentication gateway in **TypeScript** for secure, role-based access to **Azure** resources.
- Built a Terraform module deploying AzureAI infrastructure, supporting high-scale ML workflows on Homes.com.

### CoStar Group (Apartments.com)

Software Engineering Intern

Jun 2023 – Aug 2023

Washington, D.C.

- Reduced query latency by 70% by building a **JSON-to-SQL** transpiler for large-scale property data.
- Integrated language tool into Node pipelines through a **Rust** interpreter compiled to **WebAssembly (WASM)**.
- Automated Pod autoscaling for **AWS SQS** and **Kafka** triggers with **Terraform**, improving app response times by 3×.

### Liberty Mutual Insurance

Software Engineering Intern

May 2022 – Aug 2022

Remote

- Built a **React.js** frontend for deployment image tracking, enabling ID-powered searches.
- Created a **Flask** REST API for analyzing Splunk and Datadog logs to monitor pod crashes and uptime.
- Curtailed build pipeline traversals via **Redis** caching, resulting in 55% faster search results.

### NASA Harvest Lab @ UMD

Machine Learning Researcher

Jan 2022 – Aug 2022

College Park, MD

- Prototyped crop forecasting model to isolate high-signal land regions, fine-tuning **Extra Trees/Random Forest** models.
- Produced global harvest quality control filters. Trained **Random Forest Regressor** on geospatial data.

## Projects

### MessageMe | Java, Spring Boot, Angular, Hibernate, Liquibase

May 2025

- Developed a real-time messaging app using Spring Boot with WebSocket support.
- Integrated PostgreSQL with JPA/Hibernate and managed schema migrations with Liquibase.
- Implemented user authentication, message history retrieval, and chat room logic.

### GeekOS | C

Aug 2023 – Dec 2023

- Implemented core OS primitives like pipes, virtual memory, signals, and a distributed file system on a Linux variant.
- Focused on process and memory management, including paging-based isolation.

### Detouree | Networks, Geo-Spatial Computing, Next.js, CockroachDB

Apr 2023

- Calculates quickest route around real-time map disruptions using an optimized routing algorithm.
- Caches updated real-time routes; users can input, update, and delete disruptions by drawing polygons on a map.

## Technical Skills

**Languages:** Python, Java, JavaScript, C, Go, OCaml, Ruby, SQL, Rust

**Web & Frameworks:** HTML, CSS, React, Angular, Flask, Spring Boot, Next.js, LangChain

**Databases:** MySQL, PostgreSQL, MongoDB, Pinecone, Weaviate, ChromaDB

**Cloud & DevOps:** Kubernetes, AWS, Azure, Azure DevOps, Docker, Terraform, Git, Linux, YAML

**Libraries:** pandas, NumPy, Matplotlib, TensorFlow

**Certifications:** AWS Certified Solutions Architect – Associate (2025)