

# Ashwath Krishnan

## Software Engineer

📞 732-853-6160 ✉ ashwath@krishnan.io 🔗 <http://krishnan.io> 🐘 SphinxNumberNine 📍 New York, NY

### Professional Experience

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#### Capital One Financial Corporation

*Senior Associate Software Engineer*

Aug 2023 – present | New York, NY

- Designed and built machine learning and statistical models using Python (PySpark and TensorFlow) as part of Capital One Cyber's Automated Access Control initiative.
- Created model monitoring scripts in Python and Bash to ensure performance and reliability, optimized the models' AWS infrastructure, and created serverless functions in AWS Lambda to publish model output to consumers.
- Led the end-to-end planning, development, and deployment of the Entitlement Risk Score statistical model, assigning quantified risk levels to Capital One's ~400,000 internal accesses at a 99.85% satisfaction rate among entitlement owners.
- Enhanced the accuracy of the Automated Access machine learning model by integrating a critical data source, increasing model accuracy by 12% for a high-impact subset of users responsible for 16% of access requests.

*Associate Software Engineer*

Aug 2022 – Aug 2023 | New York, NY

- Designed and implemented user-facing screens for the iOS (Swift) and Android (Kotlin) versions of Capital One's commercial banking app, Intellix Mobile.
- Developed backend endpoints with Golang and contributed to the migration of infrastructure from AWS EC2 to AWS Fargate.
- Led the development of feature toggle functionality, enabling the application to switch between states without requiring new app releases.
- Spearheaded the integration of the Marathon test automation tool, enhancing CI/CD pipelines by enabling automated mobile testing on emulated devices and increasing the test coverage of the Android application by 31%.

#### Optum Technology, Associate Software Engineer

Jun 2021 – Jun 2022 | Boston, MA

- Collaborated as part of an agile software development team to enhance UnitedHealth Group's Individual Insurance website, UHOne.com, aiming to improve customer retention throughout the insurance shopping experience by adding features such as application saving and help drawers.
- Developed front-end components using AngularJS, implemented backend endpoints with .NET Core and Microsoft Azure Active Directory, and managed integrations with an Azure CosmosDB database.

#### University of Maryland, Student Instructor

Jan 2020 – May 2021 | College Park, MD

- Taught CMSC389E, a hands-on computer science course about digital logic design focusing on building a functional 3-bit computer from scratch in the popular video game Minecraft.
- Authored comprehensive course materials, including syllabi, lecture content, homework assignments, project guidelines, solution sets, and more.
- Delivered lectures, managed course logistics, and integrated project submissions with UMD's project submission server framework.

### Education

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**University of Maryland, Bachelor of Science, Computer Science**

Aug 2018 – May 2021 | College Park, MD

**GPA:** 3.77/4.0

**Minors:** Statistics, Cybersecurity

**Related Coursework:** Object Oriented Programming 1 & 2, Introduction to Computer Systems, Discrete Structures, Data Structures, Programming Handheld Systems, Algorithms, Introduction to Data Science, Introduction to Machine Learning, Computer Networks

### Skills

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**Languages:** Python, Java, JavaScript, SQL, Swift, Kotlin, C/C++, C#, Ruby, Golang, R, Rust

**Frameworks and Libraries:** React, Pandas, Numpy, PySpark, Spring, Node.js, .NET Core, Tensorflow, Matplotlib

**Tools:** AWS (S3, Lambda, EC2, ECS, Sagemaker), Docker, MongoDB, Snowflake, Git, Jenkins, Jira

**Certifications:** AWS Solutions Architect: Associate