

Baalavignesh Arunachalam (He/him)

baalavignesh.com | baalavignesh21@gmail.com | LinkedIn: [Baalavignesh Arunachalam](https://www.linkedin.com/in/baalavignesh-arunachalam/)

EDUCATION

George Mason University
Master of Science in Computer Science GPA: 3.78

Virginia, United States
August 2024 - Expected May 2026

PSG College of Technology
5 years integrated Master of Science in Software Systems

Coimbatore, India
June 2018 - May 2023

SKILLS

Programming Languages: TypeScript, Python, Swift, SQL, JavaScript, HTML, CSS, C#, C, C++

Technologies: React, Next.js, Node.js, AWS, Terraform, Docker, Kubernetes, CI/CD, NumPy, DevOps

PROFESSIONAL EXPERIENCE

George Mason University

August 2025 –Present

Graduate Research Assistant

- Researching game theory applications using Multi-Agent Reinforcement Learning (MARL) with Python, implementing Q-learning algorithms to model strategic interactions in competitive business environments
- Investigating the Bertrand competition model through experimental simulations to analyze pricing strategies, Nash equilibrium convergence, and market dynamics in oligopolistic scenarios

Motate

May 2025 – August 2025

Software Developer Intern

- Building a serverless multilingual content platform using AWS Lambda/API Gateway, enabling translations across multiple languages with automated scaling, and using step functions with SageMaker for GPU-intensive tasks.
- Automated AWS environments via Terraform/GitHub Actions and optimized DynamoDB schemas with secondary indexes, improving query speeds while maintaining SOLID-coded Lambdas.

Presidio, Inc.

March 2023 – July 2024

Associate Software Engineer

- Developed internal learning platforms and retro tools using React, designing a scalable architecture on AWS with a serverless approach utilizing Lambda, API Gateway, Cognito, and RDS with MySQL for seamless data management.
- Engineered an Award Maintenance platform using Azure AD, React, Lambda, and Node.js with a Microservices architecture. Implemented a CI/CD pipeline with GitLab, streamlining the development process and ensuring faster delivery.
- Contributed to client projects for accessibility, enabling seamless interaction for hearing-impaired users, using WebRTC, React, and Microsoft Azure, delivering robust solutions for web development.

Toast, Inc.

June 2022 – July 2022

Software Developer Intern

- Managed several gigabytes of invoice bills using DynamoDB with Lambda for a serverless solution with authorizers for the REST API through API Gateway for efficient data retrieval and processing.
- Optimized data scans by implementing Local and Global Secondary indexes, reducing overall scan times by 40%. Applied SOLID principles to enhance code maintainability.

CERTIFICATION & ACHIEVEMENTS

- Certified Kubernetes Application Developer issued by The Linux Foundation (CKAD)
- AWS Certified Solution Architect and Cloud Practitioner issued by Amazon Web Services
- HashiCorp Certified: Terraform Associate (003)
- Best Prototype Award - Story3 Hackathon, HackerEarth

PROJECTS

BuyTime

A productivity tool to analyze the screen time of a user on multiple devices

- Developing a Swift app using Apple's DeviceActivityEvent API and FamilyControls framework to track and manage screen time with precision, featuring an "earned time" system where users complete tasks to unlock screen time.
- Implemented gamification elements, including streaks, focus mode, and real-time progress tracking via Live Activities to drive sustained user engagement.

SkillAgent

Personalized Learning Platform for Workforce Development

- Created a personalized learning platform leveraging OpenAI to provide customized skill development plans and AI tutoring, utilizing Vite.js, Tailwind CSS, Vanta.js, and Redux Toolkit for a seamless and interactive user experience.
- Integrated OpenAI's Assistant and Threads features with a Node.js backend following the MVC architecture, utilizing Axios for API communication and Firebase Firestore for secure data storage.