

## Boomika Karuppaiah

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### EDUCATION

#### The George Washington University

Washington, DC

Master of Science in Computer Science (GPA: 3.88)

May 2024

- Graduate Teaching Assistant – Introduction to Programming in Python (Fall 2023 and Spring 2024)

#### Amrita Vishwa Vidyapeetham

Coimbatore, India

Bachelor of Technology in Computer Science and Engineering (GPA: 8.96/10)

May 2016

- Outstanding Student Award Recipient

### TECHNICAL SKILLS

- C++, Python, Java, C#, Kotlin, SQL, AWS, HTML, CSS, JavaScript, Vue.js, MongoDB, XML, Unix/Linux Scripting, Robot Framework, JIRA, Git, Jenkins, Agile

### RELEVANT WORK EXPERIENCE

#### HP INC.

Bangalore, India

##### Software Engineer II

May 2020 – June 2022

- Led enhancement and upkeep of Embedded Web Server (EWS) pages for HP+ LaserJet printers as a feature owner. Added new features and resolved 100+ critical bugs, revamped remote management capabilities and user interaction through a blend of C++, HTML, and CSS
- Designed and developed Firmware for user reports and EWS diagnostic pages. Streamlined Web Services Registration flow by identifying and addressing over 10 connectivity issues, reducing network-related customer support calls by 95%
- Facilitated collaboration with third-party vendors to achieve precise translation of 1000+ strings into eight languages for the EWS, ensuring seamless integration and adoption in 50+ global markets

##### Software Engineer

November 2017 - April 2020

- Pioneered a Python and MongoDB-based triage tool to autonomously identify and track defects by analyzing over 100k lines of trace logs, cutting down manual effort in issue prioritization and resolution by 80%
- Engineered a Python tool to automate conversion of manual test cases into scripts for Simple Network Management Protocol testing, cross-referencing available features for nearly 20 million permutations and dramatically decreasing total testing time from 2 months to a mere 20 minutes
- Built a server monitoring dashboard with Vue.js and Zabbix, optimizing surveillance for 200+ servers, delivering real-time insights into server health, and boosting operational efficiency by 30% and system reliability by 25%

#### SAMSUNG R&D INSTITUTE INDIA

Bangalore, India

##### Software Engineer

June 2016 - October 2017

- Created scripts for comprehensive tests on the Samsung Android Printer Solution app - Equitrac, utilizing Robot Framework to validate 20+ error-cause use cases and various authentication modes, expanding test coverage
- Devised, owned, and managed 5,000+ scripts in Robot Framework for Simple Network Management Protocol validation on printers, ensuring well-composed automation to elevate testing efficiency and accuracy

### ACADEMIC PROJECTS

- Virtual Reality Application:** Developed a Virtual Reality role-playing game for Python coding education, enhancing learning through immersive experiences, leading to a 40% increase in student engagement
- Augmented Reality Application:** Created an Augmented Reality app using C# to interactively teach users about Earth's geological and geographical features; awarded Best AR Project at the Festival of Animations, Fall 2023
- AWS Web App:** Produced a scalable, secure AWS-based web application for university admissions, utilizing EC2, RDS, and load balancing techniques to guarantee 99.99% uptime and boost performance by 50% during peak usage
- Graphics Rendering Engine:** Prepared and implemented a sophisticated Rendering Engine in C++, incorporating advanced shading, illumination models, and texture mapping techniques to increase visual realism and engagement
- Artificial Intelligence:** Formulated an AI-driven Python solution for the Graph Coloring Problem, refining vertex coloring for 1,000+ node datasets using CSP, Backtracking, and Arc Consistency algorithms
- Artificial Intelligence:** Engineered a Python application with the A\* algorithm to optimize pitcher game solutions, achieving a 35% reduction in computation time and dynamically exploring state spaces for efficient pathfinding
- Computer Simulator:** Constructed a CISC Simulator in Java, integrating machine code to demonstrate cache, memory, and vector operations; enhanced understanding for 35+ computer science students
- Mobile Application:** Devised and constructed a quiz application leveraging Kotlin, integrating Firebase as a database to manage quiz questions, answers, and user scores, supporting up to 1000 concurrent users
- Computer Vision:** Innovated a MATLAB-based software tool conceived to combat inattention blindness, employing real-time object learning and recognition, improving user perceptual abilities by 30%