Raghav Kumar

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Education

The Pennsylvania State University, University Park Aug 2024 – May 2026
- MS in Computer Science & Engineering Current GPA: 4.0/4.0
- **Coursework:** Advanced Computer Architecture, Computer Security

Netaji Subhash Institute of Technology, Delhi University Aug 2016 – Aug 2020
- BE in Computer Engineering Cumulative GPA: 8.6/10.0

Skills

Web development	JavaScript, TypeScript, C#, React, Jest, Dot.Net, Azure Monitor, Azure Active Directory
Large Language Models	Semantic Kernel, Azure OpenAI Services, Prompt Engineering
CI/CD	Azure DevOps, EV2, Azure App Services, Azure Functions, Azure Kubernetes Cluster
Computer Systems	Lex/Yacc, CUDA, Gem5, Software & Web Security, Linux
Enterprise IT	SharePoint, Power Automate, Power Apps
Data analysis	PySpark, PowerBI, Azure Synapse
Blockchain	Solidity, Ethereum

Work Experience

Software Engineer @ **Microsoft** (**4 Years**) Aug 2020 – Aug 2024
- Published automation templates for Microsoft's IT ecosystem that helped save 50,000+ employee hours annually
- Designed and developed a mobile-first Microsoft Teams application to distribute the automation templates to 12,000+ employees and measure the resulting time savings
- Automated deployment of template packaging service for Power Platform to Kubernetes clusters serving 12 different geographies with geo-specific configurations using EV2
- Helped increase customer satisfaction with enterprise search service over 50% by providing big-data analysis scripts and visualization dashboards to knowledge managers for monitoring and learning from billions of enterprise search events
- Led multiple iterations of Agile SCRUM planning, negotiating between PMs, Engineers, and Vendors to measure and ensure project progress; received 3 promotions during this stint
- Published a bimonthly newsletter with learning resources, available through corporate access and otherwise, for Early in Career colleagues

Software Engineer Intern @ **Texas Instruments** (**3 Months**) May 2019 – July 2019
- Implemented a translator to convert Python-like code into assembly instructions for a real-time micro-processor with RISC architecture, that led to a 25% drop in development time as well as runtime errors
- Built a static code analyser and visualization tool to catch accidental register overwrites in assembly programs

Relevant Projects

Writing performant **CUDA kernels** (ongoing work for Master's thesis) 2024

Comparative analysis of **Systolic Array** designs for ResNet and FasterRCNN (ScaleSim) 2024

Comparative analysis of **execution order and memory hierarchy** in CPUs (Gem5) 2024

Exploiting **Buffer Overflow Vunerabilities** in C programs (GDB) 2024

Exploiting **SQL Injection, XSS, CSRF and other vulnerabilities** in web applications 2024

Exploited a series of vulnerabilities in **Solidity smart contracts** running on Ethereum Virtual Machines as a part of Ethernaut capture the flag competition by OpenZepplin [**my notes**] 2021

Published a secure **Trust-Based Secure Multipath Routing Protocol for Opportunistic Networks**, in International Journal of Communication Systems that outperformed baseline secure probabilistic routing protocols by 18% in terms of delivery probability and secured communication through secret sharing 2020

Certifications

Microsoft Certified: Azure Developer Associate Issued January, 2024
Microsoft Certified: Azure Fundamentals Issued December 2022
Blockchain for Developers: Hyperledger Fabric on Azure Issued December 2020