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:** Computer Architecture, Computer Security, Compilers, Deep Neural Networks

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

Skills

Web development	React, TypeScript, Dot.Net, SharePoint, Power Platform
Infrastructure and CI/CD	Azure DevOps, EV2, Azure App Services, Azure Functions, Azure Kubernetes Cluster
Computer Systems	Lex/Yacc, CUDA, Software & Web Security, Linux
Data, ML, AI	SQL, PowerBI, PySpark, Azure Synapse, PyTorch, Azure OpenAI Services, Semantic Kernel
Blockchain	Solidity, Ethereum, Cardano

Work Experience

Software Engineer 2 @ **Microsoft** (**4 Years**) — Aug 2024 – Aug 2020
- Built and published automation templates for Microsoft IT ecosystem that led to 50,000 employee hours saved annually
- Distributed the templates to more than 12,000 employees by designing and developing a mobile-first Microsoft Teams application in React, complete with CI/CD pipelines, that was also instrumental in measuring time savings
- Automated deployment of template packaging service for Power Platform to Kubernetes clusters in 12 different geographies with custom configurations for each using EV2
- Developed and integrated performant React components in Power Platform Admin Website to setup the packaging service, leading to the private preview of the feature for more than 40 customers
- Analysed millions of search telemetry events and developed visualization dashboards to enhance enterprise knowledge management, that led to over 50% upswing in customer satisfaction with enterprise search services
- Consistently led quarterly and monthly Agile SCRUM planning meetings, negotiated with PMs, Engineers, and Vendors to measure and ensure progress
- Promoted and pioneered use of low-code automation to rapidly turn ideas into working PoCs and volunteered as SME
- Authored detailed documentation, working notes and tutorials for team deliverables, and knowledge sharing initiatives

Software Engineer Intern @ **Texas Instruments** (**3 Months**) — Jul 2019 – May 2019
- Implemented a translator to convert Python-like code into assembly instructions for PRU-ICSSG real-time microcontroller that reduced development time of routing protocols by 25%
- Designed and built a static code analysis GUI that visualized control flow of assembly programs, and helped reduce accidental register overwrites

Projects

Exploitation of 10 **Cardano Smart Contract** vulnerabilities in CTF created by Vaccum Labs — Feb, 2025

Implementation of efficient **CUDA kernels** that matched 93% performance of CuBLAS — Jan, 2025

Comparative analysis of 15 **Systolic Array** designs for ResNet and FasterRCNN (ScaleSim) — Nov, 2024

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

Exploitation of **SQL Injection, XSS, CSRF and other vulnerabilities** in web applications — Oct, 2024

Exploitation of **Buffer Overflow Vunerabilities** in C programs (GDB) — Sep, 2024

Exploitation of 21 **Solidity smart contract** vulnerabilities in Ethernaut CTF by OpenZepplin [**notes**] — Jun, 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 — Feb, 2020

Certifications

Microsoft Certified: Azure Developer Associate Issued Jan, 2024
Microsoft Certified: Azure Fundamentals Issued Dec, 2022