

# Raghav Kumar

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## Education

<b>The Pennsylvania State University, University Park</b>	Aug 2024 – May 2026
• MS in Computer Science & Engineering	Current GPA: 4.0/4.0
• <b>Coursework:</b> Computer Architecture, Computer Security, Compilers, Deep Neural Networks	
<b>Netaji Subhash Institute of Technology, Delhi University</b>	Aug 2016 – Aug 2020
• BE in Computer Engineering	Cumulative GPA: 8.6/10.0

## Skills

<b>Web development</b>	React, TypeScript, Dot.Net, SharePoint, Power Platform
<b>Infrastructure and CI/CD</b>	Azure DevOps, EV2, Azure App Services, Azure Functions, Azure Kubernetes Cluster
<b>Computer Systems</b>	Lex/Yacc, CUDA, Gem5, Software & Web Security, Linux
<b>Data, ML, AI</b>	SQL, PowerBI, PySpark, Azure Synapse, PyTorch, Azure OpenAI Services, Semantic Kernel
<b>Blockchain</b>	Solidity, Ethereum, Cardano

## Work Experience

<b>Software Engineer @ Microsoft (4 Years)</b>	Aug 2020 – Aug 2024
<ul style="list-style-type: none"><li>Helped save more than 50,000 employee hours annually by publishing automation templates for Microsoft's IT ecosystem</li><li>Distributed the templates to more than 12,000 employees by designing and developing a mobile-first Microsoft Teams application, which was also instrumental in measuring time savings</li><li>Automated deployment of template packaging service for Power Platform to Kubernetes clusters in 12 different geographies, with geo-specific configurations using EV2</li><li>Increased 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</li><li>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</li><li>Published a bimonthly newsletter with learning resources, available through corporate access and otherwise, for Early in Career colleagues</li></ul>	
<b>Software Engineer Intern @ Texas Instruments (3 Months)</b>	May 2019 – July 2019
<ul style="list-style-type: none"><li>Reduced development time by 25%, and additionally helped reduce run time errors, by implementing a translator to convert Python-like code into assembly instructions for a real-time micro-processor with RISC architecture</li><li>Reduced accidental register overwrites in assembly programs by building a static code analyser to visualize control and data flow using a GUI built with Python and Tkinter</li></ul>	

## Relevant Projects

Writing performant <b>CUDA kernels</b> (ongoing work for Master's thesis)	2024
Comparative analysis of <b>Systolic Array</b> designs for ResNet and FasterRCNN (ScaleSim)	2024
Comparative analysis of <b>execution order and memory hierarchy</b> in CPUs (Gem5)	2024
Exploiting <b>Buffer Overflow Vulnerabilities</b> in C programs (GDB)	2024
Exploiting <b>SQL Injection, XSS, CSRF and other vulnerabilities</b> in web applications	2024
Exploited a series of vulnerabilities in <b>Solidity smart contracts</b> running on Ethereum Virtual Machines as a part of Ethernaut capture the flag competition by OpenZepplin [ <a href="#">my notes</a> ]	2021
Published a secure <b>Trust-Based Secure Multipath Routing Protocol for Opportunistic Networks</b> , 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