Raghav Kumar

State College, PA, 16803 | thisisraghavkumar@gmail.com | +1-814525-(2882) | Website | LinkedIn | GitHub

Availability (Flexible): 12 May, 2025 to 22 Aug, 2025

Education

The Pennsylvania State University, University Park	Aug 2024 – May 2026

- MS in Computer Science & Engineering — Current GPA: 4.0/4.0
- **Grad Coursework:** Deep Neural Networks, Algorithms, Compiler, Computer Architecture, Computer Security, Security Analysis of Emerging Systems

Netaji Subhash Institute of Technology, Delhi University	Aug 2016 – Aug 2020

- BE in Computer Engineering — Cumulative GPA: 8.6/10.0

Skills

Frontend & Backend	**React.js, TypeScript**, JavaScript, Dot.Net, C#, Power Platform
Infrastructure and CI/CD	Azure IaaS and PaaS, Azure DevOps YAML Pipelines
Computer Systems	C/C++, Python, **CUDA**, Linux, **Lex/Yacc**, Software & Web Security
ML, AI, & Data Analysis	**PyTorch**, Semantic Kernel, SQL, PySpark, PowerBI
Web3	Solidity, Ethereum, Cardano

Work Experience

Software Engineer 2 @ **Microsoft** (**4 Years**) — Aug 2024 – Aug 2020

- Built and published Power Platform automation templates for Microsoft IT ecosystem that led to 50,000 employee hours saved annually
- Developed a mobile-first, SSO-enabled, Microsoft Teams application, using **React** for frontend, and **Dot.Net** for the REST API, to enable easy discovery of templates, and the app achieved a peak MAU of 12,000
- **Automated deployment** of the React web applications, Dot.Net API backends, and Azure Infrastructure using Azure DevOps YAML Pipelines
- Developed and integrated performant React components in Admin Website, of Microsoft PaaS Power Platform, 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 transpiler** to convert Python-like code into assembly instructions for a real-time RISC microcontroller, that reduced development time of routing protocols by 25% using Ply - Python library for Lex/Yacc
- Designed and built a **GUI for data flow analysis** that visualized flow of values in registers in an assembly programs, to help reduce accidental register overwrites

Projects

Automatic detection of double spending in **Cardano Validators** using SMT solver in Rosette	Ongoing
Value numbering **compiler optimization** for a simple arithmetic language	Mar, 2025
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	Feb, 2020