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Ruchi Saha

EDUCATION

Dual Degree (BTech + MTech) Computer Engineering, CGPA: 8.89/10 (2015 - 2020)
Indian Institute of Information Technology, Design and Manufacturing, Kancheepuram

WORK EXPERIENCE

Software Engineer 2, Microsoft India R&D Pvt Ltd (Apr'24 - Present)
- *Tech Stack:* LLM, Semantic search, React, Typescript, Azure, DevOps, Kubernetes, C#
- FIled a **patent** on a novel KAG (Knowledge Augment Generation) algorithm for enabling deep domain specific or cross-domain research in a private knowledge base.
- Created a mobile UI component from scratch which is used by Microsoft Powerhouse Apps (Word, Excel and Powerpoint).
- Recreated UI components to achieve modern UI and achieved 60% performance gain in boot time in major Microsoft apps (Word, Excel, Powerpoint, Onenote, etc.)
- Handled DevOps for App Home Pages for Word, Excel and Powerpoint. Redesigned the web app to enable server side rendering to boost Performance. Also handled Security and Privacy reviews for the new design.
- *Innovation* - Winner, 3rd Place, in Microsoft's Global Hackathon.

Backend Server Engineer, Samsung R&D Institute India-Delhi (Jan'21 - Apr'24)
- *Tech Stack:* Microservices, Scala, Java, Redis, Postgres, Kubernetes, AWS, CDN, REST API, Cloud System Design
- Worked on microservice based softwares, which collects data from several continents to empower Samsung TV+ services.
- Redesigned core data ingestion system which improved data correctness to **>99%** and also provided a better scalability with reduced processing time. The system processes more than 100Gb of data every day.
- Fixed legacy issues in a critical service which minimized 5xx errors on servers. The system uses CDN and serves more than **a million requests a day** directly to active Samsung's Smart TVs.
- *Innovation:* Awarded 'Best In Development - Business Idea' at the organizational idea-demo. Won a prize for a chosen concept in the department-level ideathon. Initiated the conduct of events and ideathons to promote innovation culture in the department. This contributed to 5+ POCs from our department.

Network Systems Researcher (Final Year Project/ Master's Thesis), IIITDM Kancheepuram (Nov'19 - Jul'20)
- *Tech Stack:* Python, FPGA (Programmable hardware), Verilog, Vivado, Network System Design, IPv4 Packet Forwarding
- Developed a FPGA-based Multi-match Packet Classification Architecture for Network Intrusion Detection Systems.
- Achieved 5.9x higher performance while consuming 5x lower resource. Also enabled configuration time hardware scaling.
- Work submitted to the journal of Computer Systems Science and Engineering (A short summary of work here).
- Supervised by Dr Noor Mahammad SK, supported by the Ministry of Electronics and Information Technology, Govt. of India.

Cryptography Research Intern, IDRBT, Hyderabad (May'19 - Sep'19)
- *Tech Stack:* Python, Cryptography
- Researched on Data Integrity and Deduplication in fog to cloud based IoTs (link), Supervised by Dr P Syam Kumar.
- Work was submitted to the Computer Networks journal in Elsevier.

Network Analyst (Intern), GAVS Technology (May'18 - Jul'18)
- *Tech Stack:* Lua, C++, Kafka, Solr
- Established data pipeline from open source packet sniffer to Solr server, transferring hundreds of records per second.

SKILLS

Programming Languages and Databases	Scala, Python, Java, C++, React, Redis, PostgreSQL
Cloud and Software Technologies	Microservices, System Design, Kubernetes, Docker, AWS, CDN, REST APIs
AI Frameworks	Ollama, Langchain
Additional Skills	Research, Innovation

CERTIFICATIONS & AWARDS

Winner - Microsoft Global Hackathon, Microsoft	(2024)
UPMS Award (Best In Development - Innovation, Business Value & Usability), Samsung R&D Institute	(2023)
2 Spot Awards, Samsung R&D Institute	(2023)
Ford CSAM IoT Security Paper Presentation (link), Won Best Paper Award	(2019)