

SURAJ PATEL MUTHE GOWDA

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EDUCATION

Northeastern University, Boston, MA [CGPA 4.0]

Expected Sep '26

Master's in Electrical and Computer Engineering (Computer Vision, Machine Learning and Algorithms)

Relevant Coursework: Computer Architecture, Fundamentals of Computer Engineering, Robotics, Sensing and Navigation, LLM Based Chat Agent

PES University, Bengaluru, India [CGPA 3.5]

May '22

Bachelor's in Electrical and Electronics Engineering (Embedded Systems)

Relevant Coursework: Digital Signals Processing, Artificial Neural Networks, Data Structures and Algorithms, Soft Computing Techniques, Digital Electronics, Analog Electronics, Microsystems

TECHNICAL SKILLS

Programming Languages:

Python, Java, Kotlin, C, Go Lang, MATLAB

ML/AI Frameworks:

TensorFlow, PyTorch, Hugging Face, OpenCV

Cybersecurity and Networking:

API Design, Mobile Threat Detection, Phishing and Vishing Protection

Mobile & App Development:

Android App Development

H/W Development and Design:

VHDL, VLSI, Embedded C, Arduino, PCB Design, Shaders, OpenMP

WORK EXPERIENCE

Samsung Research and Development Institute, Bengaluru, India

Apr - Aug '24

Senior Software Development Engineer

- **Engineered a multi-modality threat detection system** that identified 10k+ threats daily, boosting device security by 25% with AI-driven anomaly detection across communication channels
- **Developed and deployed On-Device vishing protection solutions** for Samsung, reducing fraud risk by 40% through real-time machine learning analysis of call patterns, processing up to 100k calls daily
- **Developed a deepfake detection** solution with 92% accuracy using EfficientNet for image analysis and BERT for content detection, reducing identity theft and misinformation by 30%

Samsung Research and Development Institute, Bengaluru, India

Aug '22 - Mar '24

Software Development Engineer

- **Developed mobile security solutions for Knox AI B2B projects** to protect enterprise users from emerging threats, utilizing AI-driven protocols for robust protection
- **Optimized AI security models** to enhance user security by improving threat detection accuracy by 20% through fine-tuning with real-world data to detect and mitigate vulnerabilities in enterprise devices
- **Implemented bootloader-level security features on Exynos and Qualcomm chipsets** to ensure secure device startup and protect sensitive user data from unauthorized access
- **Integrated DevOps tools for automated data generation** and analytics, reducing security update deployment time by 35% and enabling real-time protection for 500k+ users, while enhancing system efficiency in threat detection and mitigation

Samsung Research and Development Institute, Bengaluru, India

Jan - Jul '22

Student Intern

- **Engineered inter-process communication between shaders** to enhance data transfer and processing, boosting rendering performance while utilizing Shader Storage Buffer Objects
- **Developed various shaders (Fragment, Vertex, Compute, and Geometric)** using OpenGL and Vulkan, improving rendering quality in Android projects built with Android Studio

ACADEMIC PROJECTS

Optimization of Cache Management Using AI

Sep - Dec '24

- Developed AI-driven cache management strategies using **supervised learning algorithms** to predict cache hit/miss patterns, improving memory access efficiency and minimizing processor stalls to enhance performance in high computing environments
- Applied **reinforcement learning** algorithms to dynamically adjust cache policies based on real-time feedback, leveraging Valgrind and Cachegrind tools to track access patterns, benchmark AI-driven policies against traditional ones, and achieve improvements in energy efficiency and system latency

PUBLICATIONS

Multimodal Strategy to Defend Mobile Devices Against Vishing Attacks, ACM MobiCom '24, [Link](#)

Dec '24

A Multimodal Vishing Threat Detection (MmVTD) framework, which leverages transformer encoders across multiple data modalities such as call transcripts, mobile screenshots, and OCR-extracted text, to detect Vishing attempts.