YUKITH M JOSEPH

Computer Science & Engineering (Networks) · Presidency University, Bengaluru · 2026

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SUMMARY

Driven sophomore CS student specializing in AI/ML, embedded systems, and network engineering, with a proven track record of shipping real-world projects across voice AI, computer vision, IoT, and cybersecurity. **Top 30 at Smart India Hackathon 2025** and national finalist at multiple hackathons. Seeking a software engineering or AI/ML internship where I can contribute immediately and grow within a high-performance engineering team.

TECHNICAL SKILLS

Languages: Python · C · Embedded C · SQL

AI / ML: Whisper AI · Ollama (local LLMs) · Computer Vision · Anomaly Detection · ML Pipelines

Frameworks & Tools: CustomTkinter · Arduino · Unity Engine · Git · DLP Systems

Systems & Networking: TCP/IP · IoT Architecture · Edge Computing · Sensor Fusion · Embedded Firmware

Concepts: Multithreading · Voice Activity Detection · Offline-First Design · Real-Time Inference · System Hardening

Cloud & Certs: Microsoft Azure AI Fundamentals (AZ-900)

PROJECTS

Sugar AI – Offline Voice-Controlled Desktop Assistant *Python · Whisper AI · Ollama · MeloTTS · CustomTkinter*

- Engineered a fully offline AI voice assistant with wake-word activation, achieving sub-second response latency by routing speech through on-device Whisper AI transcription and a locally hosted LLM via Ollama — eliminating cloud dependency entirely.
- Designed a multithreaded, event-driven audio pipeline handling concurrent transcription, LLM inference, and TTS playback without frame drops or race conditions.
- Built an interactive desktop UI with real-time status indicators, conversation history, configurable system prompts, and memory context — providing a seamless hands-free experience.
- Implemented voice activity detection with adaptive wake/sleep commands, reducing spurious activations and enabling natural conversational flow.

AI-Powered Autonomous STP Cleaning Robot *Computer Vision · ML · Robotics · Unity Engine · Embedded Systems*

- Developed an autonomous robot for sewage treatment plant cleaning, deploying ML-based multi-class waste detection to eliminate hazardous manual entry — targeting 100% hands-off operation in toxic environments.
- Built a priority-based task scheduler that dynamically reorders cleaning sequences based on ML classification confidence scores, improving operational throughput.
- Implemented a hybrid control system combining autonomous AI decision-making with manual operator override and real-time telemetry dashboards.
- Created a physics-accurate Unity Engine simulation environment to iterate and validate robot behavior before physical deployment, reducing hardware testing cycles.

Smart Waste Management System – IoT & Edge Intelligence *IoT · Arduino · Edge Computing · Sensor Fusion · Web Dashboard*

- Deployed an IoT-based urban waste monitoring network using ultrasonic fill-level sensors with edge computing, cutting cloud dependency and enabling autonomous real-time status tracking.
- Integrated sensor fusion for volumetric estimation and automated alert triggers, reducing manual inspection overhead by an estimated ~70% across distributed collection points.
- Engineered low-power embedded firmware with intelligent sleep-wake scheduling for continuous uninterrupted deployment in urban infrastructure settings.
- Delivered a live web/mobile monitoring dashboard supporting predictive collection scheduling and multi-point data aggregation.

ShadowGuard – Enterprise AI Data Protection System *Cybersecurity · Anomaly Detection · DLP · Access Control · System Hardening*

- Architected a multi-layered enterprise security system to prevent sensitive data exfiltration to external AI platforms and unauthorized LLM services, enforcing DLP protocols across file uploads, storage connections, and network channels.
- Built an automated anomaly detection engine with real-time breach response and immediate shutdown protocols, minimizing the data leakage surface dynamically.

- Integrated a policy enforcement engine for insider threat detection and continuous pipeline monitoring, strengthening organizational security posture.

Deepfake Detection & Digital Authentication System *Machine Learning · Computer Vision · Audio/Video Processing · Pattern Recognition*

- Built a multi-modal deepfake detection pipeline combining facial landmark tracking, audio frequency anomaly detection, and temporal consistency analysis to identify AI-synthesized media with high precision.
- Designed an integrated document verification layer cross-referencing identity claims against legitimate sources to detect deepfake-based institutional impersonation.
- Optimized the detection model for low false-positive rates, enabling scalable deployment without disrupting legitimate media workflows.

ACHIEVEMENTS & RECOGNITION

- Top 30 Finalist – Smart India Hackathon 2025, Government of India (out of thousands of national teams)
- National Finalist – Nirmith 2026 National-Level Hackathon, NITTE Meenakshi Institute of Technology
- Runner-Up – Hardware Hackathon, InnovateX 4.0, Presidency University (2026)
- Runner-Up – Hardware Expo, Presidency University (2026)
- Microsoft Azure AI Fundamentals Certified – Cloud AI services, MLOps concepts, and Azure Cognitive Tools

LEADERSHIP & CAMPUS INVOLVEMENT

Organiser – InnovateX Tech Fest · Presidency University 2026

- Orchestrated 10 simultaneous technical events for ~280 participants across 60–70 competing teams; managed ₹10,000 prize distribution, faculty coordination, and logistics — event received World Record recognition.

Event Head – Build Club 2024 – Present

- Lead planning and execution of technical events; coordinate cross-functional student teams to ensure smooth operations, high participation, and impactful outcomes.

Core Coordinator – One-O-One Club & Event Head – Informatica Club 2024 – Present

- Manage academic and tech events end-to-end across two clubs — handling logistics, volunteer coordination, and participant engagement to promote emerging technology awareness on campus.

EDUCATION

B.Tech – Computer Science & Engineering (Networks) 2024 – 2028 (Expected)

Presidency University, Bengaluru, India **CGPA: 7.56 / 10**

Relevant Coursework: Computer Networks · Artificial Intelligence · Database Management Systems · Data Structures & Algorithms · Network Security