

Yash Gupta

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EXPERIENCE

Software Engineering Intern

April 2026 – Present

Revdau

Bengaluru, Karnataka

- Built and designed a distributed real-time AI voice agent platform by integrating STT-LLM-TTS-telephony, reducing integration complexity by 70% through modular service abstraction and API orchestration
- Engineered a low-latency streaming pipeline achieving <500ms response time, enabling real-time conversations via async processing, μ -law encoding, and Voice Activity Detection (VAD)
- Designed a scalable backend supporting 100+ concurrent agents using modular service architecture, OOP principles, and layered API design, improving system reliability
- Reduced agent deployment time by 80% by building config-driven templates (48 agents across 12 industries) using Next.js and dynamic configuration systems
- Implemented real-time telephony and multi-language support (3+ languages, 46+ voices), expanding accessibility using Twilio integration and Sarvam STT/TTS pipelines

Software Engineering Intern

July 2025 – August 2025

MobiRapid

Bengaluru, Karnataka

- Designed and deployed a scalable inventory management system handling 10K+ devices across 5 lifecycle stages with 99.9% uptime
- Architected 12+ RESTful services using Node.js and MongoDB, reducing P95 latency by 81% via compound indexing and query optimization
- Implemented JWT-based authentication, RBAC (4 roles), and audit logging supporting 1K+ daily transactions
- Led development of 8 React forms with Yup/Formik validation validation cutting errors 65% and completion time 60% (5min to 2min) automated reporting pipelines using cron and PDFKit, cutting operational effort by 90%

EDUCATION

B.M.S College of Engineering

Sep 2023 – May 2027

B.Tech in Electronics and Telecommunication Engineering - CGPA: 8.25/10

Bengaluru, Karnataka

Relevant Coursework: Data Structures, Operating Systems, Computer Networks, Cryptography, Database Systems

PROJECTS

ECG Biometric Authentication System | *Embedded C, STM32, ESP32, TensorFlow Lite Micro* [Github](#)

- Designed ECG acquisition system using analog front-end (MAX30003/AD8232) with SPI/ADC interfacing on STM32, ESP32, and RP2040
- Implemented real-time signal conditioning (bandpass filtering, noise suppression) for reliable bio-signal processing
- Deployed quantized 1D-CNN inference (INT8, pruning) on microcontrollers to enable real-time, low-power biometric authentication at the edge
- Developed secure hardware-oriented authentication using encrypted biometric templates and ECG-derived key generation
- Analyzed power, latency, and memory trade-offs across platforms for low-power embedded deployment

PAN Merchant Fraud Detection System | *React, Node.js, Python, PostgreSQL, NetworkX* [Github](#)

- Built a distributed fraud detection pipeline processing 100K+ merchant nodes using graph algorithms (NetworkX)
- Detected 85+ fraudulent merchant networks (up to 7,699 nodes) using NetworkX connected components and optimized graph traversal
- Implemented cosine similarity over 16-dimensional embeddings to surface related merchants and hidden fraud patterns
- Developed scalable Node.js and Flask APIs with PostgreSQL indexing and a React dashboard for real-time fraud visualization and search

Academic Question Paper Intelligence System | *Python, SQLite, OCR, Streamlit* [Github](#)

- Designed a scalable pipeline to ingest and manage **10,000+ PDFs (10GB)** with SHA-256 deduplication and normalized metadata indexing in SQLite
- Built a multi-stage data system (raw → extracted → parsed) to structure papers into **50,000+ questions**, enabling fast search and unit-wise retrieval
- Implemented statistical ranking using frequency and recency analysis to identify probable exam questions with efficient query performance

EXTRACURRICULAR ACHIEVEMENTS

Senior Flight Control Engineer

June 2024 – July 2025

Rocketry BMSCE

Bangalore, Karnataka

- Led development of control algorithms in C++ to improve reliability and stability of high-performance flight systems
- Optimized real-time sensor data pipelines and reduced latency in control loops, showcasing strong problem-solving in distributed, performance-critical systems
- Simulated and validated algorithms under varying conditions, reinforcing focus on scalability, testing, and fault tolerance

TECHNICAL SKILLS

Data Structures & Algorithms: Solved 400+ problems on LeetCode (Top 19% & 1600+ rating)

Languages: JavaScript, Python, Java, C/C++, TypeScript, HTML, CSS, Embedded C

Frameworks & Libraries: React, Node.js, Express.js, FastAPI, Flask, Streamlit, TensorFlow Lite Micro, NetworkX, Yup/Formik

Databases & Storage: PostgreSQL, MongoDB, SQLite, AWS

Systems & Infrastructure: REST APIs, WebSockets, Distributed Systems, Microservices, Telephony (Twilio), Async Processing

AI/ML & Signal Processing: LLM Integration (OpenAI), STT/TTS Systems, Voice Activity Detection (VAD), Graph Algorithms, Cosine Similarity, Digital Signal Processing

Tools & Platforms: Git, Linux, SQLAlchemy, JWT/OAuth, Bcrypt, Cron Jobs