Abhishek Rajput

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SUMMARY

Systems Integration Engineer with 2+ years building complex robot & AI systems from scratch. Highlights: Slashed robot tracking latency 3x by fusing YOLOv8 & UWB data. Architected multi-tenant IIoT backend for 60,000+ live data tags. Built full-stack RAG AI app (Django, Celery, Qdrant, Llama 3). Seeking Backend or Systems Integration role to solve hard, real-world problems.

SKILLS

Backend & Architecture: Python, Django, DRF, FastAPI, PostgreSQL, Celery, Redis, WebSockets, REST APIs, Multi-Tenant Systems, Scalable Backend Design

Robotics & Hardware: ROS2, SLAM (RTAB-Map), Sensor Fusion, Sensor Integration (LiDAR, Intel RealSense, IMU, UWB), Control Systems

AI & Machine Learning: RAG, Computer Vision (OpenCV), Object Detection (YOLOv8), Pose Estimation, LLM Integration (Llama 3, Groq), Vector Databases (Qdrant), Tesseract (OCR)

Frontend: Next.js, JavaScript, TypeScript,

Tools & DevOps: Linux, Git, Docker (Basic), VS Code, Postman

WORK EXPERIENCE

NexusAutomech   Apr2024–Aug2025
SoftwareDeveloper   (1year5months)

- Co-led the 2-person software team (4-person cross-functional team) for all robotics and IIoT projects.
- Drove projects from initial R&D and hardware selection through final production-ready deployment.
- Specialized in system integration, backend architecture (Python, Django, Celery, Redis), and real-time sensor fusion.
- Project: Full-Stack Robotics Control & Sensor Fusion System (Autonomous Industria Robot)
  - *WHAT:* Architected the entire full-stack software for an autonomous industrial robot, creating a robust, real-time control system.
  - *HOW:* Built a Django/Python backend with WebSockets/REST APIs and a Next.js frontend (sub-100ms latency). Integrated ROS2 with sensors (SICK 3D LiDAR, Intel RealSense, IMU, UWB). Engineered a hybrid sensor fusion system (YOLOv8 + UWB).
  - *IMPACT:* Solved critical performance bottlenecks. The sensor fusion **slashed follow-me latency by 3x** (from approx 500ms to 150ms), transforming it into a reliable, production-ready feature. Delivered a field-tested, fully functional system.
- Project: Scalable Multi-Tenant IIoT Backend Platform (60k+ Tags)
  - *WHAT:* Engineered a high-throughput backend to manage and monitor thousands of industrial HMI PLC devices in real time, solving a critical data visibility problem.
  - *HOW:* Built on Django, using Celery/Redis for async data ingestion from 60,000+ tags. Designed a complex multi-layer Role-Based Authorization system. Served live data to 500+ users via a WebSocket-powered monitoring dashboard using PostgreSQL.
  - *IMPACT:* Replaced a slow, manual process, giving users their first unified, real-time view of factory operations. Solved critical data security and operational visibility problems, enabling real-time, data-driven decisions.

RapidOps   Aug2022–Feb2023
FrontEndDeveloperIntern   (7months)
- Built responsive UI components using React, HTML, CSS, and Sass for E-commerce business
- Collaborated with design team to implement pixel-perfect interfaces
- Contributed to feature development across 3-4 different client projects

BhaskaracharyaInstituteforSpaceApplicationsandGeoinformatics(BISAG)   Jun2022–Aug2022
SoftwareDevelopmentIntern   (3months)
- Contributed to a human face recognition project utilizing Python and basic computer vision libraries (e.g., OpenCV).
- Responsible for data processing, labeling, and model tuning, successfully improving model accuracy from approx 92.56% to 97.69%

PERSONAL PROJECTS

- Full-StackGenAIRAGKnowledgeAssistant   Sep2025–Present
  WHAT: Independently architected and built a scalable, full-stack GenAI knowledge assistant from 0 to 1.
  HOW: Engineered a fully asynchronous backend (Django, Celery, Redis) for non-blocking AI workloads. Built the complete RAG pipeline integrating Tesseract OCR, Google Embeddings, Qdrant vector DB, and Groq LPU (Llama 3) for high-speed inference. Developed a real-time (Channels/WebSockets) modern frontend (Next.js, TypeScript, Zustand). Integrated Supabase for DB/storage.
  IMPACT: Proves ability to architect and ship a complex, market-ready AI product solo. Demonstrates deep, end-to-end understanding of the entire GenAI stack – from scalable backend infrastructure and data pipelines to vector search optimization and real-time UI.
  Skills: Python, Django, RAG, LLM, Qdrant, Celery, Redis, Next.js, TypeScript, Zustand, AI Engineering, Full-Stack Development, Tesseract (OCR), Vector Databases, Groq, WebSockets, System Architecture

EDUCATION

Silver Oak University   2021 – 2024
                                                                                           Ahmedabad, Gujarat

B.Tech/B.E. Computer Engineering