

Kunj Patel

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Professional Experience

Oct 2024 – Present

Wolfsburg, Germany

Software Engineer — Sentics

Tech: C++, CMake, GitHub Actions, Conan, JFrog Artifactory, MQTT, Kafka, OpenCV

- Architected a modular **CI/CD pipeline** using **GitHub Actions**, reusable workflows, and **Conan**, automating build, package creation, caching, and conditional artifact publishing to **JFrog Artifactory**.
- Engineered a networked vehicle-speed reduction module in **C++** using **MQTT**, reducing braking response latency by **30 ms** under real-time constraints.
- Profiled and optimized a multi-camera **sensor-fusion pipeline** using **OpenCV** and custom **C++ modules**, eliminating memory leaks and improving runtime stability.
- Refactored the **object-matching algorithm** in a **multi-perception system**, improving matching accuracy and reducing execution overhead.
- Implemented **multi-tenancy** via **configuration-driven environment isolation**, enabling multi-environment deployment without code duplication.
- Reduced overall **C++ codebase size** by **5%** through targeted **refactoring** and **modularization**.
- Collaborated cross-functionally with **frontend** and **perception teams** to align **UI components** with backend and real-time perception outputs.

Jun 2024 – Jul 2024

Ahmedabad, India

Software Intern — TatvaSoft

Tech: REST, PostgreSQL, Angular

- Built a virtual community platform for buying and selling books with full **CRUD** functionality.
- Developed **REST APIs** in **.NET** with **PostgreSQL**-backed persistence.
- Integrated **Angular** frontend components with backend services.

Education

M.S. in Computer Science — Marburg University, Germany

B.E. in Computer Engineering — L.D. College of Engineering, India

Skills

Languages: Python, JavaScript, C++

Databases: PostgreSQL, MongoDB, Redis

Backend: Node.js, Express, Flask

Frontend: React, HTML, CSS

DevOps / Infrastructure: Linux, Docker, CI/CD, GitHub Actions, JFrog Artifactory, Kafka

Testing: GTest, JUnit

Languages: English (C1), German (A1)

Projects

Wanderlust (Node.js, Express, MongoDB, EJS, Cloudinary)

- Built a property rental and booking platform with listings, reviews, dashboards, and multi-filter search.
- Implemented **PassportJS authentication**, **MVC architecture**, **Cloudinary** media pipeline, and Render deployment.
- Improved scalability through modular routing and **middleware** abstraction.

Expert System for Video Games (Python, Rule-Based AI)

- Designed an expert system processing 165,000+ entries with sub-0.5s decision latency.
- Built a **fault-tolerant CSV ingestion pipeline** with 100% parsing accuracy.
- Achieved 95% recommendation correctness.

Other Projects:

Real Estate UI Platform (React, Node.js)

Library Management System (Java, TDD)

Kafka JSON Streaming Tool (Python)

Certifications

Google Cloud Foundations (Networking & Security)

Introduction to Generative AI

Smart India Hackathon Participant