

OMANSHU BHATT

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Portfolio: <https://omanshu-bhatt-portfolio.vercel.app/> Github: <https://github.com/Omanshu09> LinkedIn: <https://www.linkedin.com/in/omanshubhatt/>

PROFESSIONAL SUMMARY

Software Developer specializing in AI/ML and full-stack development. Builds end-to-end systems — from RAG-based retrieval and LLM reasoning pipelines to real-time collaborative applications. Comfortable shipping production-grade code across the stack.

TECHNICAL SKILLS

Languages: Python, Go, Java, JavaScript, C

Web & Frameworks: React.js, FastAPI, Node.js, Django, HTML, CSS, Typescript

Data & Databases: Elasticsearch, PostgreSQL, Redis, Neon

AI / ML: PyTorch, LangChain, Generative AI, RAG, Vector Databases

Cloud, DevOps & Systems: Docker, Kubernetes, Kafka, CI/CD (Jenkins, GitHub Actions)

Distributed & Realtime Systems: Yjs, CRDTs, Ably, IndexedDB, REST APIs, Distributed State Synchronization

Core CS: Data Structures & Algorithms, Operating Systems, Database Management Systems, Object-Oriented Programming

FEATURED PROJECTS

Web Research & Evidence Engine

- Built a research-driven web evidence search engine for query processing, multi-source retrieval, content extraction, relevance filtering, ranking and agreement/contradiction detection, generating structured source-backed responses through LLM synthesis.
- Architected Python/FastAPI search and evidence-processing services with a React research interface and Dockerized deployment.
- Tech:** Web Search, Information Retrieval, Evidence Extraction, RAG, LLM, FastAPI, React, Docker
- Benchmarked across 100+ research queries, achieving ~85% relevant source retrieval with sub-10s median response time.

Code: <https://github.com/Omanshu09/Search-Engine>

Live: <https://search-engine-frontend-xi.vercel.app/>

Real-Time Collaborative Engineering Workspace

- Built a real-time collaborative workspace with multi-user CRDT-based Notepad editing, near-instant synchronization, independent Python execution, shared output, and automatic state recovery during connectivity loss.
- Deployed React/Vite on Vercel, FastAPI/Node.js on Render, Ably for realtime messaging, Yjs/IndexedDB for conflict-free collaboration and offline persistence, Neon PostgreSQL for room state and E2B for isolated Python execution.
- Tech:** React, TypeScript, Vite, Node.js, Express, Yjs, CRDT, Ably, IndexedDB, PostgreSQL, Neon, E2B, REST APIs, Vercel, Render
- Instant collaborative synchronization during multi user editing, with offline local state retention and isolated Python execution

Code: <https://github.com/Omanshu09/Nexus-deployment>

Live: <https://nexus-deployment-frontend.vercel.app/>

Engineering Intelligence Platform

- Built a browser based intelligence platform that analyzes public GitHub repositories to uncover code structure, symbols, imports, dependencies and architectural relationships, presenting the results through an interactive repository explorer and dependency graph.
- Developed an impact analysis and architecture review workflow that traces relationships between modules, identifies complexity and structural signals and uses AI reasoning to generate grounded architecture insights, risks and recommendations.
- Tech:** JavaScript, TypeScript, React, Web Workers, Static Analysis, GitHub API, Dependency Graphs, JSON, Vercel Serverless Functions
- Validated across diverse GitHub repositories for reliable code intelligence, dependency analysis, and architectural insights.

Code: <https://github.com/Omanshu09/FORGE>

Live: <https://forge-omanshu.vercel.app/>

EXPERIENCE

Trainee Intern | Indian Oil Corporation Limited (IOCL) | July 2025 – August 2025

- Worked with operational data and database systems to analyze trends, identify recurring patterns, and support data-backed improvements in engineering processes.
- Collaborated directly with IOCL engineers and technical teams, gaining hands-on experience in database management, enterprise engineering workflows, and quality-focused problem solving.

Virtual Intern — AI/ML & Robotics | Kodacy | July 2024 – August 2024

- Applied Python to AI/ML and data-analysis tasks, working with datasets to extract patterns, evaluate results, and build practical solutions.
- Developed Python-based robotics simulation prototypes, gaining exposure to algorithmic problem solving, automation and intelligent systems.

CERTIFICATIONS

- Oracle — Agentic AI Certified Foundations Associate
- TCS iON Career Edge - Young professional
- NASA — Hyperspectral Data for Land and Coastal Systems
- Deloitte — Cyber Job Simulation
- Commonwealth Bank — Software Engineering Job Simulation
- University of Oxford — AI, Justice and rule of law
- BCGX — GenAI Job Simulation
- Cisco — Data Science

EDUCATION

- Govind Ballabh Pant University of Agriculture and Technology, Pantnagar | 2022 – 2026 | CGPA: 7.2**
Bachelor of Technology (B.Tech) - Computer Engineering
- Beersheba Senior Secondary School, Almora**
Class XII | 2021 – 2022 | 90.4%
Class X | 2019 – 2020 | 95.3