Hitarth Bharad

Tucson, AZ, USA

+1 (520) 342-9637 | hitarth.bharad@gmail.com | linkedin.com/in/hitarthbharad/ | github.com/HitarthBharad

hitarthbharad.vercel.app

Software Engineer

Software Engineer with 3+ years of experience in development, distributed systems, and cloud-based solutions. Strong expertise in **Java (Spring Boot), Python (Django, DRF), Javascript/Typescript (React, Next.js), API development, and Machine Learning.** Passionate about **building high-scale smart services**, ensuring reliability, and optimizing system performance for business-critical applications.

Education

University of Arizona – Tucson, AZ, USA — GPA: 3.9/4.0
M.S. in Information Science & Machine Learning — Aug 2023 – May 2025

Dhirubhai Ambani Institute of Information and Communication Technology – Gandhinagar, India
B.Tech. in Information and Communication Technology — Aug 2017 – May 2021

Skills

- Programming Languages: C++, Python, Java, JavaScript, TypeScript
- Backend Development: Python (Django, DRF), Java (Springboot), Node.js (Express.js, Next.js)
- Frontend Development: React.js, Next.js, Remix.js, Tailwind CSS, Material UI
- Databases: SQL, NoSQL, PostgreSQL, MySQL, MongoDB,
- Cloud & DevOps: Microsoft Azure, Jenkins, Kubernetes, Vercel, API Integration (REST / RESTful, SOAP), Azure Blob Storage, AWS S3
- Performance Optimization: Multi-threading, memory-efficient algorithms, debugging & profiling, WebSockets.
- Machine Learning & Data Processing: Tensorflow, PyTorch, Sci-Kit Learn, pandas, numpy, huggingface, transformer.
- Leadership & Communication: Agile Methodologies with Scrum & Kanban, Team collaboration, project coordination, cross-functional stakeholder management and Efficient Communication.
- Others: Object Oriented Programming, SOLID principles, LINUX Operating System.

Experience

FERO.AI – Dubai, UAE — Sept 2021 – July 2024
Software Engineer

- Working in an early-stage startup, designed and implemented highly scalable and available SaaS infrastructure, including cloud-based storage and API layers for Authentication, Payment Gateway and Financial Services, Channel Partnership, and Presales Modules, supporting **enterprise clients** across **15+ countries**.
- **Led the system architecture and prototyping** (POC) of new projects to improve product development process and deliverables, ensuring faster go-to-market strategies and better scalability.
- Led the development of iPaaS – CrossDock product (Integration Platform as a Service), integrating 30+ third party systems, reducing the data transfer time to achieve **20% increase in operational efficiency**. Platform contributed to the reducing the development time to **nearly 60%.**
- Designed and developed the high scale SaaS solution for Logistics First mile, Mid mile and Last mile road freight delivery planning, trip management, contract management and revenue management for enterprise logistics client in MENA, Europe, Asia region.
- **Developed and Integrated, LLM** (ChatGPT - OpenAI, Mistral) based **RAG** pipeline for knowledge management, smart reporting to reduce customer query resolution time by 60% and improving smart query resolution.
- Engineered robust backend services utilizing **Java (Spring Boot), Python (Django, DRF),** and **JavaScript frameworks (Express.js, Next.js)** for cloud-based applications that enhanced scalability and reduced latency.
- Implemented the Agile project management (**Scrum, Kanban**) to streamline the project and improve delivery cycle.
- Utilized the DevOps tools – (**Azure, Kubernetes, Jenkins**) to optimize cloud deployments and ensure high availibility.
- Participated in **on-call rotations**, contributing to reliability monitoring, debugging, and security processes.

Verse Innovation – Bengaluru, India — June 2021 – Aug 2021
Associate Software Engineer

- Developed **backend infrastructure** for a high-traffic video streaming platform serving **10M+ daily active users**, ensuring system stability and scalability.
- Optimized API architecture using Java (Spring Boot), reducing API response times by **40%** and increasing throughput by **25%.**
- Implemented user management & customized data feed services, leveraging AI-driven content recommendation, increasing user engagement by 20% and retention rate by **15%**.

Projects

VSI Lab Web Application – University of Arizona

- Designed and developed a fully responsive web application using Next.js, TypeScript, HTML, CSS, and ShadCN UI (Tailwind).
- Implemented a public-facing site showcasing lab details, publications, research, tools, projects, and people.
- Built a secure admin dashboard for managing CRUD operations efficiently.
- Utilized MongoDB for data storage and implemented authentication with Clerk to ensure secure access.

Connect IO – LLM Agent for Journals

- **Technologies: Next.JS, Django, OpenAI – LLM and Embedding, Pinecone, Neo4j, MongoDB, Clerk.**
- Implemented semantic search using Pinecone and Neo4j to enable efficient querying and association of journal entries with related topics, enhancing data discovery.
- Integrated advanced natural language processing (NLP) techniques to improve the LLM's understanding of journal content, providing more accurate and context-aware insights.

Efficient Hyperspectral Image Classification for Remote Sensing Application

- **Technologies:** Pytorch, Transformer, Datasets
- Developed a novel vision transformer architecture for efficient Hyperspectral Image Classification problem for Remote Sensing applications, allowing higher accuracy and lower inference latency against state of the art models.
- Submitted the research paper in Internation Conference for Computer Vision (ICCV) 2025.

Tucson Crime Pattern Analysis Dashboard

- **Technologies:** R (Shiny App, Quarto), PostgreSQL, Leaflet.js, Time-Series Analysis.
- Built an **interactive crime analytics dashboard** using **R (Shiny, Quarto)** for real-time data visualization.
- Fetched and processed crime data from the **Local Police Department API** to provide **trend analysis and geospatial mapping**.
- Integrated **Leaflet** for interactive maps, allowing users to filter crime hotspots by time, type, and location. Developed **time-series & Geospatial models** for crime pattern analysis, helping authorities allocate resources efficiently.

Research Publication

- Published a research paper on "Performative analysis on Ion sensitive field effect transistor by varying intrinsic parameter" - Research Paper Link