Bhoomika Marigoudar

bhoomikamarigoudar@gmail.com | +91 8073481121 | Dharwad, Karnataka

GitHub ↗   **Linkedin** ↗

Summary

A passionate and impact-driven software engineer in the making, with hands-on experience in full-stack development, real-world AI projects, and automation frameworks. Backed by a strong foundation in computer science fundamentals, my work spans UPI systems, disaster AI, and LLM-based tools — blending innovation with scalability. I'm deeply motivated to craft robust, scalable systems that customers love, and thrive in collaborative, high-performance engineering environments.

Education

Bachelor of Engineering in Computer Science And Artificial Intelligence   📅 Nov 2022 - Present
KLE Technological University - Hubli, India
CGPA: 8.67 | 6th Semester
Higher Secondary   📅 Aug 2020 - July 2022
Timmangoudar's Prism College - Dharwad, India
Courses: PCMB - 95%
Middle And High-Schooling   📅 Jun 2016 - Aug 2020
JSS Shri Manjunatheshwar English Medium School - Dharwad, India
Secured 3rd place in the school with 97.6%

Skills

Programming Languages:	Java, C++, Python, C, JavaScript
Web Development & Frameworks:	HTML, CSS, React.js(Basics), Node.js (Basics), RESTful APIs
Databases:	SQL, PostgreSQL, MongoDB, NoSQL Database Design
CS Fundamentals:	Object-Oriented Programming (OOP), Data Structures & Algorithms, Computer Networks, Database Management System (DBMS), Operating System (OS), Software Development Life Cycle (SDLC), Agile Methodology
Tools & Technologies:	Git, GitHub, Postman, Jenkins, CI/CD Pipelines, Test-Driven Development (TDD)
Cloud & DevOps:	AWS (Basics), Docker (Basics)
Interpersonal Skills:	Problem-Solving, Communication, Team Collaboration, Code Reviews, Leadership, Time Management, Adaptability, Logical Reasoning

Projects

E-Bank App – Secure UPI Transactions ↗

- **Designed** the **E-Bank App** with unique features including **QR code payments, secured profiles, ATM locator, budgeting tools, AI-driven customer support, multi-language support, and real-time transaction tracking**, ensuring a seamless digital banking experience.
- **Implemented** Twilio-based **OTP login using phone numbers** for secure authentication, enhancing user verification and account safety.
- **Developed** key financial functionalities such as **Login and Signup** with Twilio OTP verification, ensuring a smooth and secure user experience.
- **Tested and validated** API endpoints using **Postman**, covering edge cases, input validation, error handling, and response consistency for critical modules like authentication and transaction processing.

YOLO11-Based Flood Victim Detection & Rescue Alert System ↗

- **Developed** a real-time AI-powered disaster response solution using the **YOLO11** deep learning model, achieving **92% precision** in detecting and counting humans and animals in flood-affected regions.
- **Integrated** an **automated email alert mechanism** to notify rescue teams instantly, ensuring swift and informed decision-making.
- **Conducted** a **comparative analysis with YOLOv8**, demonstrating superior accuracy in identifying **partially occluded and small objects**, making it a robust tool for real-world disaster management.

LLaMA Meets RAG: Concept-Aware Summarization of Academic Papers ↗

- **Engineered** a concept-aware summarization pipeline using **Retrieval-Augmented Generation (RAG)** and a **LoRA-optimized LLaMA 3.2-1B** model to summarize scientific papers from arXiv.
- **Integrated** semantic search with **Facebook AI Similarity Search (FAISS)** and a transformer-based concept selector to enhance retrieval precision and summary quality.

- **Achieved** high performance with **ROUGE-L: 0.739** and **BERTScore F1: 0.955**, outperforming baseline models in content preservation and contextual relevance.
- **Developed** a user-friendly **Gradio web interface** for real-time paper search, summarization, and key concept visualization.

Inventory Management System Using Object-Oriented Programming ⧉

- **Developed** a **command-line interface (CLI)** application to efficiently manage system entities such as permissions, roles, users, customers, suppliers, sales, and inventory.
- **Implemented** core **CRUD (Create, Read, Update, Delete)** operations for managing entities using unique IDs like `permission_id`, `role_id`, `user_id`, etc.
- **Optimized** data management workflows, ensuring smooth and efficient operations for inventory tracking and role-based access control.

Honors & Awards

Amazon Future Engineer Scholar | 2022-2026 Certificate

DXC Programming Minds Scholar | 2023-2025 Certificate

Publications

- **"YOLO11-Flood-Victim-Detection-and-Rescue-Alert-System"** was published at the *3rd International Conference on Futuristic Technologies*, Pune, India (2025) – Certificate

- **"Llama meets RAG:Concept-Aware Summarization of Academic Papers"** was published at the *3rd International Conference on Artificial Intelligence : Theory and Applications*, IBS Banglore Off-campus Center of IFHE University – Certificate

Certifications

Networking Basics by Cisco ⧉

Agile Methodoloy By Infosys SpringBoard ⧉

Continuous Integration and Delivery - DevOps By Infosys SpringBoard ⧉

Introduction to Generative AI with AWS ⧉