Aghar Usman Kannanthodi

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linkedin.com/in/aghar-usmankt | github.com/aghar-usman | Portfolio

Education

Malnad College of Engineering *Hassan, Karnataka, India*
B.E. in Information Science & Engineering – CGPA: 7.81/10 (First Class with Distinction) Aug 2021 – May 2025

Relevant Coursework: Machine Learning, Deep Learning, NLP, Computer Vision, Data Structures, DBMS, Statistics, Linear Algebra

Technical Skills

Languages: Python, JavaScript, Java, C, SQL

Web Technologies: React.js, HTML5, CSS3, REST APIs, Flask, FastAPI, Three.js, GSAP

Databases & Cloud: PostgreSQL, MySQL, MSSQL, SQLite, Google Cloud Platform

DevOps & Tools: Git/GitHub, Docker, Linux/Unix, CI/CD, JWT Authentication

ML/AI: TensorFlow, Keras, PyTorch, Scikit-learn, NLTK, spaCy, Hugging Face, LangGraph

Data Science: Pandas, NumPy, Matplotlib, Seaborn, OpenCV, EDA

Professional Experience

AI Intern *Feb 2025 – May 2025*
Team Thai Calicut, Kerala, India

- Built production-ready Text-to-SQL chatbot using LangGraph and Llama 3, enabling natural language database queries with sub-second response time and 100% SQL injection prevention
- Designed 3-node state machine with automated retry logic and context-aware prompt engineering, achieving robust semantic parsing with JWT authentication and rate limiting
- Deployed scalable NLP pipeline with 5 RESTful endpoints supporting stateful dialogue history, 4 pagination options, and connection pooling for PostgreSQL/MSSQL backends
- Reduced average response time by 35% through efficient algorithm design and optimized queries

Technical Projects

Sales Analytics Chatbot: Text-to-SQL System | *LangGraph, Llama 3, Flask, PostgreSQL* *2025*

- Engineered production-grade conversational AI using LangGraph state machine and Llama 3 for semantic parsing, translating natural language queries into SQL with multi-database support
- Implemented robust security layer with 9-pattern adversarial detection, JWT authentication (24-hour validity), and rate limiting (10 requests/minute)
- Built scalable Flask RESTful API with 5 endpoints supporting stateful dialogue history, 4 pagination options, connection pooling, and 30-second query timeout with retry logic
- Designed context-aware prompt engineering with 4-table schema descriptions and 3 few-shot examples per query type, achieving zero-shot SQL generation
- **GitHub:** github.com/aghar-usman/Chatbot

Outcom.ai Marketing Website Frontend | *React.js, React Router, Three.js, GSAP* *2025*

- Architected modern frontend using React 18+ and React Router v6 with modular component architecture across Home, Career, and Blog pages
- Built responsive SPA with Three.js 3D graphics, Anime.js micro-interactions, and GSAP scroll animations across 6 modular sections
- Implemented component-based architecture using Vite build tool with code splitting, achieving <1.5s First Contentful Paint and 60fps animations
- **GitHub:** github.com/aghar-usman/OUTCOM

AgriLeaf Pro: IoT & ML Disease Detection System | *TensorFlow, Flask, OpenCV, IoT* *2024–2025*

- Developed full stack web application with Flask backend and OpenCV preprocessing for real-time disease detection, achieving 87% field deployment accuracy
- Built custom 5-layer CNN classifying 19 plant diseases with 92-95% training accuracy and <100ms inference time (Published in 2 peer-reviewed journals)

– Integrated IoT sensor network with ThingSpeak API monitoring 6 soil parameters with 7-day visualization, enabling correlation analysis between environmental conditions
– Implemented complete distributed system with user authentication, secure image upload, and REST API endpoints for scalable cloud deployment
– **GitHub:** github.com/aghar-usman/Leaf-Disease-Detection-using-CNN

Interactive Portfolio Website | *React, Three.js, GSAP, Anime.js* *2025*
– Built responsive portfolio with Three.js 3D graphics, Anime.js micro-interactions, and GSAP scroll animations across 7 sections featuring flip card projects
– Implemented advanced UI/UX with dark mode, neon accents, and optimized cross-browser compatibility
– **GitHub:** github.com/aghar-usman/my-portfolio

Publications

- Aghar Usman Kannanthodi, et al. "AgriLeaf Pro: Implementation of an IoT and ML-Based System for Leaf Disease Detection and Soil Nutrient Monitoring." *IJSREM*, Vol. 09, Issue 05, May 2025.
- Sudarshan G K, Aghar Usman Kannanthodi, et al. "Leaf Disease Detection & Classification using Image Processing and Soil Nutrients Monitoring." *Journal of Technology*, Vol. 13, Issue 1, 2025.

Achievements & Community

- **State-Level Hackathon (2nd Place):** Led 4-member team to runner-up position in 6-hour hackathon, developing a college study material platform

Additional Information

- **Languages:** English (Fluent), Hindi (Fluent), Malayalam (Conversational), Kannada (Conversational)
- **Career Interest:** Interested in pursuing a career in Japan's tech industry and contributing to innovative software solutions in a cross-cultural environment