Bharath Varma Manthena

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Education

SRKR Engineering College
B.Tech in Artificial Intelligence and Machine Learning — CGPA: 8.0 *2021 – 2025*

Tirumala Junior College
Intermediate — 85% *2019 – 2021*

Experience

PhoQtek.ai — AI FullStack Engineer *June 2025 – December 2025*

DocuGuide

- Built scalable backend pipelines (Node.js, TypeScript, Express, AWS S3) enabling multi-modal document ingestion across PDFs, YouTube, web pages, and voice inputs.
- ntegrated OpenAlex, Semantic Scholar, SERP API, and OCR systems to power a workspace-based research engine with fast, accurate knowledge retrieval.

AI PPT Generator

- Engineered a GPT-5 driven slide-generation engine with strict JSON schemas, visual modes, and automated design logic for consistent high-quality outputs.
- Implemented Flux-based asynchronous image/icon generation and an optimized rendering pipeline to deliver stable 20–50 slide decks in multiple export formats.

Autonomous Drone Navigation

- Developed autonomous UAV mission logic using MAVSDK (Python) including takeoff, altitude hold, waypoint navigation, and failsafe landing.
- Integrated PX4 stack with EKF tuning, geofencing, GPS-offset navigation, and VINS-Fusion-ROS2 for robust visual-inertial odometry.

Projects

Retrieval-Augmented Generation (RAG) System *FastAPI, Python, Embeddings, Vector DB*

- Built a complete RAG pipeline with PDF ingestion, robust text extraction, chunking, embedding generation, and vector search to enable high-accuracy semantic retrieval across multiple documents.
- Developed modular FastAPI endpoints for upload, processing, retrieval, and LLM-based answer synthesis, supporting scalable multi-document queries and citation-aware responses.

AI Art Generation using GANs *Deep Learning, GANs*

- Built and trained GAN architectures to generate abstract and landscape art.
- Experimented with training stability, loss functions, and latent space exploration.

Traffic Sign Detection *CNN, Computer Vision*

- Achieved 92% accuracy on GTSRB using a custom CNN with augmentation and hyperparameter tuning.
- Optimized the model for real-time inference.

Technical Skills

Languages: Python, C, Java, SQL

ML / DL: TensorFlow, Keras, Scikit-learn, Pandas, NumPy, Matplotlib

Tools: Git, AWS S3, Playwright, Docker, MLflow

Coursework: NLP, Data Science, ML, Computer Vision, MLOps

Certifications

- Stanford University — Machine Learning Specialization (2023)
- Google — Introduction to Generative AI (2024)