Muhammed Sinan

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Profile

Aspiring **Data Scientist** and **Machine Learning Engineer** with strong academic foundations and hands-on experience in Machine Learning, Deep Learning, Computer Vision, and MLOps. Proven ability to design end-to-end ML systems, apply explainable AI techniques, and deliver measurable analytical outcomes. Seeking MSc Data Science to deepen research-driven problem solving and scalable ML system design.

Education

- **Vel Tech Rangarajan Dr. Sagunthala R&D Institute of Science & Technology** — Chennai, India
  B.Tech — Computer Science and Engineering (Data Science Specialization) — *Aug 2022 – Apr 2026*
  - Current CGPA: **8.0** / **10**
  - Key Coursework: Machine Learning, Deep Learning, Data Structures and Algorithms, DBMS, Cloud Computing, Statistics
  - Academic Focus: Applied Machine Learning, Computer Vision, Data-Driven Systems
  - Activities: Smart India Hackathon Participant, Technical Workshops, Open Source Contributor

- **GHSS Tirurangadi** — Kerala, India
  Higher Secondary Education — Science Stream — *Jun 2021 – Mar 2022*
  - Percentage: **94%** (Full A+)

Technical Skills

- **Programming:** Python, SQL
- **Machine Learning:** Classification, Regression, Feature Engineering, Model Evaluation, Cross-Validation
- **Deep Learning:** CNNs, Transfer Learning, Explainable AI (Grad-CAM)
- **Computer Vision:** OpenCV, YOLOv5, Object Detection, Image Classification
- **MLOps:** End-to-End ML Pipelines, Experiment Tracking, Model Versioning, Reproducibility
- **Data Visualization:** Power BI, Tableau, Streamlit, Matplotlib, Seaborn
- **Databases & Tools:** MySQL, MongoDB, Git, GitHub, VS Code, Jupyter Notebook

Projects and Practical Experience

- **Comprehensive MLOps Workflow for Predictive Maintenance** [GitHub]
  - Designed a complete MLOps pipeline covering data ingestion, preprocessing, model training, evaluation, and deployment.
  - Developed predictive maintenance models achieving **85%+ accuracy** in early equipment failure detection.
  - Implemented modular architecture enabling scalability, reproducibility, and systematic experimentation.

- **Real-Time Classroom Engagement and Interaction Monitoring Using YOLOv5** [GitHub]
  - Built a real-time computer vision system to analyze classroom engagement and interaction patterns.
  - Achieved **90%+ precision** for object detection using YOLOv5 under controlled environments.
  - Converted detection outputs into engagement analytics for educational insights.

- **Explainable Deep Learning Framework for Diabetic Retinopathy Severity Detection** [GitHub]
  - Developed a deep learning classifier for diabetic retinopathy severity detection from retinal fundus images.
  - Achieved **85%+ accuracy** across multiple severity classes.
  - Applied Grad-CAM to visualize clinically relevant retinal regions influencing predictions.

- **Face Emotion Recognition Using Deep Learning** [GitHub]
  - Developed a real-time CNN-based facial emotion recognition system achieving **85%+ accuracy**.

- **House Price Prediction** [GitHub]
  - Built regression models achieving **90%+** $\mathbf{R^2}$ score through feature engineering and tuning.

Research Publication

- **Real-Time Classroom Engagement and Interaction Monitoring Using YOLOv5** — IEEE Conference Paper [PDF]

Certifications

- Python Programming Mastery: From Beginner to Pro — Udemy [Certificate]
- Mastering Data Magic: Power BI + Tableau + SQL, Analytics — Udemy [Certificate]
- Python for Data Science — Udemy [Certificate]
- Data Visualization: Empowering Business with Effective Insights — Forage [Certificate]
- The Complete MySQL Bootcamp: Go from Beginner to Expert — Udemy [Certificate]

Additional Information

- **Languages:** English, Spanish, Arabic, Hindi
- **Hobbies:** Playing football, Chess