

HEMACHANDRAN M

ML Engineer | Data Scientist

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SUMMARY

Machine Learning Engineer with experience across machine learning, deep learning, computer vision, and data analytics. Proficient in designing end-to-end ML pipelines, integrating and deploying models, and performing statistical analysis for model evaluation. Experienced in AI agent development, including model integration and API-based inference, within cloud-based and data-driven applications. Interested in contributing to AI/ML development initiatives in a production-oriented environment.

SKILLS

- Languages: Python, SQL
- ML & AI: AI Agent, Machine Learning, Deep Learning, CNN, Computer Vision, NLP
- Data Science : Data Visualization, Statistical Analysis, Data Preprocessing, Predictive Modeling
- Libraries: Pandas, NumPy, Scikit-learn, TensorFlow, Matplotlib, FastAPI, OpenCV, Streamlit
- Databases/BI: SQL, MySQL, Tableau, Power BI, Excel

WORK EXPERIENCE

Application Engineering Intern

Tidel Park Tharamani, Chennai

- Contributed to AI application development on live projects using modern AI architectures.
- Designed and deployed RAG (Retrieval-Augmented Generation) pipelines for knowledge-grounded AI responses.
- Developed AI agents for task automation and intelligent decision support, and implemented citation handling to improve AI outputs.

Research Intern, Tamil Stone Script Recognition

Centre for Development of Tamil in Engineering & Technology, Anna University

- Contributed to a government-funded Chief Minister Research Grant (CMRG) project focused on digitizing historical scripts to improve archival accessibility.
- Developed a denoising algorithm with automated background suppression, increasing inscription clarity by 60%.
- Segmented overlapping and damaged Tamil character glyphs, applying data augmentation methods to expand the training dataset and improve recognition performance.

EDUCATION

BACHELOR OF TECHNOLOGY IN ARTIFICIAL INTELLIGENCE AND DATA SCIENCE

Jeppiaar Institute of Technology, Chennai | CGPA - 8.16 | 2021-2025

HIGHER SECONDARY EDUCATION (+2)

Avichi Higher Secondary School, Chennai | Percentage - 88% | 2020-2021

PROJECTS

AI Chatbot Development

- Built an AI-powered Python chatbot with direct API integration, focusing on backend performance without reliance on UI frameworks.
- Implemented secure API handling, message flow logic, and custom prompt engineering, reducing response errors by 30% during testing.
- Defined a modular and scalable architecture, enabling faster feature additions and improving code maintainability.

AI-Driven Health Diagnosis

- Designed a medical image classification system using a pretrained EfficientNet architecture, processing 3 disease categories including brain tumors, lung cancer, and pneumonia.
- Classified brain tumors, lung cancer, and pneumonia with high accuracy.
- Used OpenCV-based preprocessing and augmentation to reduce overfitting by 25%.

House Price Prediction

- Implemented regression-based house price prediction models using 5,000+ real-world data records, achieving a 15% improvement in prediction accuracy.
- Performed feature extraction, transformation, and model evaluation using RMSE and R² metrics to validate model performance and reliability.

CERTIFICATIONS

- Introduction to Machine Learning – NPTEL
- Explore ML Using Python – Infosys
- JobReady Employability Skills – Wadhavani Foundation
- SQL & Relational Databases – Cognitive Class
- AWS Cloud Practitioner – AWS re/Start Program