Kamalesh Pandian

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Profile Summary: Developer with hands-on experience in working with datasets, statistical analysis, and Python programming. Strong problem-solving skills with a passion for turning raw data into meaningful insights to support business decisions.

EDUCATION

Rajalakshmi Engineering College **Thandalam,Chennai**
B.Tech Artificial Intelligence and Machine Learning *2021-2025*
CGPA: 8.01

Sai Matric. Hr.Sec. School **Madipakkam,Chennai**
X - 86.8%, XII - 90.52% *2008-2021*

TECHNICAL SKILLS

Programming Language: Python, Vyper

NLP & LLM Stack: Hugging Face Transformers, LangChain, spaCy, NLTK

Vector DBs: FAISS, ChromaDB

ML/DL Frameworks: TensorFlow, PyTorch, Scikit-learn

Data Analysis and Visualization : Numpy, Pandas, Scipy, Matplotlib

INTERNSHIP

NSIC - Industrial-based internship training (Python)
National Small Industries Corporation, Guindy Industrial Estate, Ekkaduthangal *01/2023*

- Strong foundation in Python with hands-on experience in scikit-learn, pandas, NumPy, and practical ML model development and evaluation.

Data Analytics Virtual Internship
Forage Platform - KPMG *05/2023*

- Conducted data quality assessments and delivered actionable insights using Python and Power BI through statistical analysis, visualization, and interactive dashboard presentations. Forage Link

SN Bose Summer Intern Program - Virtual
NIT Silchar, Assam *06/2024 - 08/2024*

- Developed a lightweight, real-time zero-shot object detector by integrating frozen OWL-ViT vision–language encoders with a trainable Deformable DETR decoder.

AI Developer Intern
Aspirerise Ventures Limited, Dublin *07/2025 -*

- Developed a legal assistant chatbot leveraging an LLM API and retrieval-augmented generation (RAG) to provide answers from chunked legal documents.

PROJECTS

- **Project 1 Land Cover Classification Using CNN:** Built a Custom-CNN using the EuroSAT dataset to classify 10 land cover types, achieving 86% accuracy through model tuning and image normalization. Github
- **Project 2 Oil Spill Detection for SAR Marine Imagery Dataset Using U-net model:** Developed a U-Net model for precise oil spill segmentation in SAR images, enabling segmentation through color-coded region mapping,based on pixel intensities. Github
- **Project 3 Hybrid CNN for Brain Tumor Classification:** Created a hybrid VGG16 & InceptionV3 model, freezing early layers and fine-tuning deeper ones, to classify brain tumor presence from MRI scans (yes/no). Github
- **Project 4 Deep Learning for Liver Tumor Segmentation and Radiomics Analysis:** Developed an AI-based medical diagnostic system capable of diagnosing infected regions using segmented masks and Radiomics test statisics (Texture Analysis and Risk Scoring). Github

RESEARCH:

- **Evaluating UNet Performance and Showcasing the Computational Benefits of SwinUNet for Liver Tumor Segmentation:** IEEE - 3rd International Conference on Intelligent Systems, Advanced Computing and Communication (ISACC) (2025) GOOGLE SCHOLAR
- **Marine Safety Enhancement through Oil Spill Detection Using U-Net Architecture:** IEEE -International Conference on Integrated Intelligence and Communication Systems (ICIICS) (2024) GOOGLE SCHOLAR
- **Interpreting Hand gestures using Object Detection and Digits Classification:** arXiv preprint arXiv:2407.10902 - (2024) GOOGLE SCHOLAR
- **Analyzing Hand Gestures Using Object Detection and Processing It into Local Language:** International Conference on Advances in Artificial Intelligence and Machine Learning in Big Data Processinging (Springer Nature Switzerland) (2023) GOOGLE SCHOLAR

EXTRACURRICULAR ACTIVITIES

- **Computer Vision Domain Head** in IEEE-CIS Club, REC Chapter (2023-2024)
- **Workshop:** Conducted workshop about basic CV algorithms and OCR Model (Tesseract) for multi-language support.
- **NPTEL Certifications:** Social Networks, Understanding Incubation and Entrepreneurship

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