Nithish S

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Education

Ramco Institute of Technology - Rajapalayam, Virudhunagar. *Expected May 2025*

Bachelor of Technology, Artificial Intelligence and Data Science
CGPA: 7.96/10.00 (till 5th semester)
Concentrations: Calculus, Linear Algebra, Data Analysis, Machine Learning, Deep Learning, Natural Language Processing.
Relevant Coursework: Building Neural Networks from scratch, Document Clustering by context classification.

Chinmaya Vidyalaya PACR - Rajapalayam, Virudhunagar. *May 2020 - April 2021*

- ***HSC - 86%***
- ***SSLC - 84%***

Professional Experience

Icanio Technologies – *AI/ML Intern, Tirunelveli.* *January 2024 – April2024*
Tech: Python, PyTorch, YOLOv8, Ultralytics, PaddleOCR.

- Implemented parking management system with computer vision.
- Developed Computer Vision models using YOLOv8 for detecting vehicle type and violation type (no helmet, triples, speed).
- Used PaddleOCR to extract License Plate Text.

Hera Diagnostics – *Deep Learning Intern; Rajapalayam, Virudhunagar* *November 2022 – November 2023*
Tech: Python, PyTorch, Keras, YOLOv5, Numpy, Matplotlib, ReportLab, OpenSlide, Flask.

- Built multiple tissue type recognition models for histological samples.
- V.1 Tumor/Stroma Binary Classifier model using CNN.
- Gathered open-source pathology data, annotated samples with a pathologist for training purposes.
- V.2 Built a cell detection model using YOLOv5, V.3 Trained a classifier model which was capable for classifying 8 types of tissues in pathology samples.

Geons Logix Private Limited – *Machine Learning Intern; Madurai.* *January 2022 - May 2022*
Tech: Python, Numpy, Pandas, Matplotlib, Seaborn, Sci-kit Learn, Flask.

- Trained a Machine Learning model using Linear Regression to predict Real Estate land prices, after statistical analysis and modeling steps.
- Trained another Machine Learning model using Linear Regression to predict mileage of used cars, after addressing missing values and outliers using Exploratory Data Analysis.

Personal Projects

Multi-Agent Personalized Tutor AI *June 2024 – Present*

Tech: CrewAI, Langchain, HuggingFace, Ollama, Google Generative AI, Streamlit, Flask

- Personalized Tutor AI for school students, with agents capable of understanding student strength and weaknesses then creating a personalized roadmap for a subject.
- Question Paper analyzer (basic requirement for Indian students).
- Knowledge Graph generator for ease of representing pure theoretical subjects.
- Internet Search Agent with searching internet text and summarizing them.

* Planning to implement more components

Chat with Documents using Open-Source models (Google Gemini API)– February 2024
Tech: LangChain, StreamLit, PyPDF

- Using Gemini API and LangChain created a local StreamLit app to chat with documents.

Fine Tuning LLaMA2 7B using PEFT (QLoRA) – January 2024
Tech: PyTorch, Transformers, PEFT, BitsandBytes

- Fine Tuning the model on an Instruction Tuning dataset for hugging face.
- LoRA attention dimension of 64 and alpha parameter for LoRA scaling was 16.\

Neural Style Transfer with VGG19 September 2023
Tech: Python, Tensorflow

- Built a CNN model capable of extracting features from one style image and applying the learnt features to a target image.
- Also used pretrained NST models from Tensorflow.

NASA Turbofan Jet Engine RUL Prediction August 2023
Tech: Python, PyTorch, Matplotlib, Numpy

- Goal was to predict how long the engine can be used for flying without servicing it.
- The dataset was time-series based data so a model was trained using LSTM.
- Given data from sensors the model was able to predict hours the engine can be used before next service.

Leadership Experience

NeotericAI Data Visualization Community – *Secretary* *August 2022 – Present*

- Held community sessions teaching data visualization using Tableau.
- Built a blog website to showcase data visualizations, created using Tableau on internet data, also carried out regular updation and maintenance tasks.

Research/Conference Publications

- Nithish et. al. (corresponding author) Benign and Malignant Cancer Prediction using Deep Learning and Generating Pathologist Diagnostic Report, *Second International Conference on Internet of Things and Health (IoTHIC 2023), Halic University, Istanbul, Turkey. (**Published to springer:** https://link.springer.com/chapter/10.1007/978-3-031-52787-6_7)*

Skills/Achievements/Certifications/Interests

- **Programming and Data Manipulation**:(Python), **Framework:**Pytorch and other common libraries used for data manipulation, **ML algorithms**, **Deep Learning:** Neural Networks (LSTM, GANs, Transformers), **Soft Skills:** Data Storytelling, Public Speaking, **Querying:** PostgreSQL, MySQL, **BITools:** Tableau, PowerBI
- **ZOHO Catalyst:** Semi-Finalist (Idea-Proposed: Incorrect document classification based on position of Digital Image and Signature).
- **IEEE (10-hrs Hackathon):** Participation (Idea-Proposed: Cancer Type Classifier)
- **GeonsLogix, Madurai:** 7-Day Industry collaborated Practical Data Science and MachineLearning.
- **MSCB University, Odisha:** 7 Day workshop on Machine Learning and Data Science.
- LinkedIn Top Voice - Machine Learning
- Coursera DeepLearning.AI
  - Linear Algebra for ML (https://www.coursera.org/account/accomplishments/verify/3PG53MJL6NY4)
  - Calculus for ML (https://www.coursera.org/account/accomplishments/verify/WHP22KRJTGYQ)
  - Build basic GANs (https://www.coursera.org/account/accomplishments/verify/CWSEX6S23LBW)
  - NLP with classification and vector spaces (https://www.coursera.org/account/accomplishments/verify/MFQFT4V886RB)
- Native Tamil speaker; Fluent in English;
- Interests: Fast Typing (English and Tamil), Cooking.