

Mandabi Mandal

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INTERNSHIP

Board Infinity Summer Internship (Machine Learning & AI)

May 2024 – July 2024

- Explored advanced machine learning techniques, focusing on **regression interpretation**, **ensemble learning**, and **evaluation metrics**.
- Applied **Decision Tree** and **Random Forest** on the **Wisconsin Breast Cancer Database** to classify tumors as benign or malignant, optimizing model performance through **feature engineering** and **hyperparameter tuning**
- Evaluated models using **accuracy**, **precision**, **recall** and **F1-score**, demonstrating the effectiveness of ensemble learning in improving robustness and **reducing overfitting**
- Gained hands-on experience in medical data classification, reinforcing the **real-world impact** of AI in **healthcare**

PROJECTS

Autonomous Vehicle Simulation – Python, Machine Learning

November 2024

- Developed a simulation framework for testing autonomous vehicles in a virtual environment to enhance safety and performance evaluation
- Integrated environmental modeling, probabilistic models for obstacle detection, and reinforcement learning for adaptive traffic behavior
- Enabled realistic testing of perception, decision-making, and control systems, reducing the need for costly real-world testing

Language Correction and Recognition System – Python, Machine Learning

November 2024

- Implemented a hybrid framework leveraging probabilistic models for improved prediction accuracy, error correction, and entity identification, surpassing traditional methods in evaluation
- Formulated a real-time text correction system combining autocorrect, spellcheck and Named Entity Recognition (NER) using Hidden Markov Models (HMMs), N-grams and Conditional Random Fields (CRF)

Text-To-Speech Bot – Automation Anywhere

October 2024

- Designed a Python-based bot using pyaudio to convert input text into human-like speech for reading out critical alerts
- Unified an email module to send the input text as an email, ensuring accessibility and notification support for users

CERTIFICATIONS

Machine Learning & AI

July 2024

Board Infinity - [Certificate Link](#)

- Interpreted linear models by understanding **coefficients**, **p-values**, **R-squared values**, and how they influenced predictions
- Analyzed ensemble learning techniques such as **Bagging**, **Boosting**, and **Stacking** to improve model performance by combining predictions from multiple models, enhancing **accuracy** and **robustness**
- Studied the optimization technique of Gradient Descent to minimize a model's loss function by iteratively adjusting parameters. Examined different variants, including **Stochastic**, **Batch**, and **Mini-Batch Gradient Descent**

Dynamic Programming, Greedy Algorithms

April 2024

Coursera - [Certificate Link](#)

- Acquired a deep understanding of key algorithmic paradigms like **Divide and Conquer**, **Dynamic Programming**, and **Greedy Algorithms**, applied them to solve complex problems efficiently
- Researched advanced computational concepts such as intractability and introductory **quantum computing** topics, focused on computational limits and the potential of quantum algorithms to tackle **NP-hard problems**

Generative AI Primer

February 2024

Coursera - [Certificate Link](#)

- Observed the transformative potential of **Generative AI** in computing, focused on techniques for crafting effective prompts and understanding how AI models responded to various input patterns
- Learned about the **ACHIEVE framework** for enhancing human-AI collaboration, optimized the use of AI in **decision-making** processes, and obtained insights into the future vision of AI integration

TECHNICAL SKILLS

- Languages:** Python, C, C++
- Technologies:** VS code, Google Colab, Automation Anywhere, Microsoft Office (Word, Excel, Powerpoint)
- Libraries:** Scikit, Pandas, Numpy
- Skills:** Data Pre-processing, Data Cleaning, Machine Learning, Generative AI, Problem Solving, Robotic Process Automation, Data Structure and Algorithms, Scripting in Python

EDUCATION

- Lovely Professional University** Since September 2022
Bachelor of Technology - Computer Science and Engineering - CGPA: 7.92
Phagwara, India
- Namo Rims Junior College** 2020 – 2021
Senior Secondary – Percentage: 92%
Pune, India
- Kendriya Vidyalaya** 2018 – 2019
Matriculation – Percentage: 96%
Pune, India