SATYARANJAN PATRA

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Education

National Institute of Technology, Karnataka	**August 2023 – July 2025**
Master of Technology in CSE (Information Security)	*CGPA:8.06/10*
Synergy Institute of Engineering and Technology, Dhenkanal	**August 2019 – July 2023**
Bachelors of Technology in CSE	*GPA: 8.84/10*
Dhenkanal Higher Secondary School, Dhenkanal	**August 2017 – July 2019**
PCM	*Percentage:74.5*
Brajanath Badajena High School , Dhenkanal	**2014 – 2017**
Class 10th	*Percentage:84*

Projects

Autonomous Vehicle Trajectory Prediction | NumPy, Pandas, Matplotlib, Pytorch   **May 2024 – Present**
- Implemented a base paper on trajectory prediction for autonomous vehicles using **LSTM on the NGSIM** dataset, achieving good accuracy in predicting lateral position and longitudinal velocity.
- Conducted a literature survey on trajectory prediction methods for autonomous vehicles, including **LSTM, GNN, GAN, Transformer based and Attention Mechanism**, as part of summer practical training.

Human Activity Recognition | Seaborn, Scikit-learn, TensorFlow, Keras   **Jan 2024 – Mar 2024**
- Performed comprehensive **EDA** on **UCI HAR** dataset, revealing balanced data and distinct activity separation using count plots and **t-SNE** clustering.
- Developed and evaluated ML models (**Logistic Regression, Linear SVC, RBF SVM, Decision Tree, Random Forest**), achieving good accuracy with Linear SVC through hyperparameter tuning.
- Implemented **LSTM**-based deep learning models on raw time series data, achieving very good accuracy and demonstrating LSTM effectiveness for time series classification.

Microsoft Malware Detection Project | NumPy, Pandas, Scikit-learn, Matplotlib   **Oct 2023 – Dec 2023**
- Implemented **KNN, Logistic Regression, Random Forest, and XGBoost** models for malware detection using the Microsoft malware dataset containing 9 classes of malware.
- Achieved best performance with XGBoost using RandomSearch for hyperparameter tuning, obtaining a log loss of 0.031 and misclassified points $< 1\%$.

Technical Skills

Languages/Database: C Programming, C++, Python, SQL

Core CS Skills: OS, DBMS, CN, Cryptography, Machine Learning
Web Technologies: HTML, CSS
Software & Tools: NumPy, Pandas, Matplotlib, Pytorch

Certifications

Certificate 1: Introduction to Algorithm and Analysis, NPTEL, IIT KGP

Certificate 2: Artificial Intelligence, LearnNex in collaboration with CyFuse, IIIT Delhi

Achievements

1: Qualified Gate 2023 (CS) exam with 96.69%, conducted by IIT Kanpur.
2: 5 Star coder at Hacker Rank.
3: One of the Top 5 percents in NPTEL Online Certification Exam.