Biswajit Nahak

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Education

B.Tech in Electronics and Telecommunication Engineering – *IIIT Bhubaneswar* Expected 2026

Projects:

ML-Optimized RFID Antenna Design [may 2025]

Tech Stack: Python, openEMS, Octave

- ❖ Simulated patch antenna in openEMS and exported RF metrics (S11, directivity, efficiency).
- ❖ Built dataset via parametric sweep and used Random Forest for optimization.

https://github.com/Biswajitnahak2003/rfid-antenna-ml

Heart Rate Activity Recognition with Arduino [apr 2025]

Tech Stack: Arduino, Python, Random Forest

- ❖ Collected BPM data using HW-827 sensor and fed into trained model.
- ❖ Predicted activities (rest/walk/run) based on BPM using Random Forest.
- ❖ Displayed predictions in real-time on vs-code terminal.

https://github.com/Biswajitnahak2003/activity_detection_using_ml

Loan Approval Prediction (Kaggle Competition) [oct 2024]

Tech Stack: Neural Network,XGBOOST,stacking

- ❖ Built an ensemble model combining XGBoost and deep neural networks to predict loan approval.
- ❖ Optimized AUC-ROC through feature engineering, missing value handling, and model calibration.

• *Ranked ~1537 on leaderboard.*

Optimal Fertilizer Prediction (Kaggle Competition) [june 2025]

Tech Stack: CatBoost, Optuna, feature engineering

- ❖ Feature engineered complex features and tuned CatBoost using Optuna to optimize in a multi-class setting.
- ❖ Built a ranked prediction pipeline with label encoding and validation.

• *Ranked ~436 on leaderboard.*

Achievements & Certifications:

• Participated in multiple Kaggle competitions.

• Complete ML, DL, DS, NLP Bootcamp – Kris Naik (Udemy) .

Technical Skills:

Languages: Python, C, C++

Libraries: *Scikit-learn, Pandas, NumPy, Matplotlib,seaborn,XGBoost, CatBoost,lightGBM*

Tools & Platforms: Jupyter, Google Colab, Git, GitHub, Arduino, octave,vs code,kaggle notebook