

ABHILASH RAPOLU

Email: rapoluabhi23@gmail.com | GitHub: <https://github.com/AbhilashRapolu/eeg-cognitive-monitor> | Location: Telangana, India

EDUCATION

IIT Hyderabad | B.Tech Electrical Engineering (3rd Year)

CURRENT PROJECT

Real-Time EEG Cognitive Monitoring System

Lab validation: 16 subjects, 48 sessions, 62k+ EEG trials

Error prediction model: 68.3% accuracy, AUC 0.678 (Gradient Boosting on 44k+ trials)

Key finding: Drift states predict +30.5% error risk, -22.9% efficiency loss

Real-time deployment: 10 sessions on consumer Muse 2 EEG headset; 4,087 trials, 273 minutes

Implemented: 15 biomarkers (theta, alpha, beta, entropy, complexity, PAC)

Algorithm: Rolling baseline adaptation; <5sec end-to-end latency

Technologies: Python, signal processing, information geometry, ML (Gradient Boosting), LSL

GitHub: Check [AbhilashRapolu/eeg-cognitive-monitor](https://github.com/AbhilashRapolu/eeg-cognitive-monitor) for more details about the project

TECHNICAL SKILLS

Languages & Tools: Python (Jupyter), Machine Learning, Deep Learning, Basic EEG Analysis

ML/DL Experience: Fraud Detection, Customer Churn Prediction, Regression Models (Housing, Sales), Classification (Titanic), Music Generation, Facial Detection

PROJECTS

Machine Learning (Kaggle)

- Credit Card Fraud Detection
- House Price Prediction
- Titanic Survivor Classification
- Customer Churn Prediction
- Black Friday Sales Forecasting

Deep Learning (MIT Online)

- Deep Learning in Python
- Facial Detection Systems
- Music Generation