Edred Azziz

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EDUCATION

Indiana University — Bloomington, Indiana
Intelligent Systems Engineering — BS May 2027
Hudson & Holland Scholar
GPA: 3.47

TECHNICAL SKILLS

Machine Learning & AI: Neural Networks, CNNs, Traditional ML (Random Forest, SVM, KNN), TensorFlow, Scikit-Learn, OpenCV, MLflow

Software & Systems: API Development (Swagger, FastAPI), Client-Server Architecture, Git, Linux, HPC (GPU Acceleration), Model Optimization & Feature Engineering

Languages: Python, C, JavaScript, Java

EXPERIENCE

Undergraduate Research Assistant — Bloomington, Indiana
Research in Extreme Environment Microelectronics Lab, IU CREATE – Indiana University — June - Aug '25

- Developed and trained a neural network on the MNIST dataset using HPC clusters, achieving 97% classification accuracy, then performed 260k **single-bit fault injection experiments** to evaluate resilience to radiation-induced errors.

Associate Instructor — Bloomington, Indiana
Indiana University — Aug '24 - Aug '25

- Supported 52 students in mastering Python programming concepts through hands-on coding exercises, debugging sessions, and personalized guidance during lab sessions and office hours.

Emergency Medical Technician — Bloomington, Indiana
STAR Ambulance Service — May '24 - Aug '25

- Provided emergency medical care by assessing patient conditions, administering interventions, and safe transport of patients
- Collaborated with medical teams and first responders to ensure effective communication and coordination during emergency situations.

PROJECTS

Stroke Prediction Using Machine Learning

- Developed a machine learning pipeline to predict stroke likelihood based on health and lifestyle data. Implemented data preprocessing (normalization, encoding, SMOTE) and trained **Logistic Regression** and **K-Nearest Neighbors** models.
- https://github.com/eazziz/Stroke-Prediction-Using-Machine-Learning

Real-Time Face Recognition & Identification System

- Developed a real-time face detection and recognition system using **Python**, **OpenCV**, and **face_recognition** libraries. Integrated webcam video capture to identify and label faces, with dynamic bounding boxes indicating recognition status (green for recognized, red for unrecognized).
- https://github.com/eazziz/Face-Recognition-Project

Diabetes Prediction API

- Developed an API to handle predictions for a **Random Forest classifier** model that predicts diabetes types based on health data. Implemented RESTful endpoints (**Swagger)** for making predictions, evaluating model performance, and generating visualizations. Optimized model accuracy through **feature engineering and pipeline integration**.
- https://github.com/eazziz/Diabetes-Prediction-API

INVOLVEMENT

Peer Mentor, Intelligent Systems Engineering

- Led a cohort of 40 freshmen, providing guidance and organizing community events to support their transition into college.

National Society of Black Engineers

- Contributed to community outreach and professional development through active participation in chapter meetings and events.