

EDWARD DWIGHT FOSTER JR.

37 Gregory Street, Marblehead, MA
781-732-9002 | dwigfost@iu.edu

Education

Indiana University, Bloomington, IN
Luddy School of Informatics, Computing, and Engineering
Minors: Business, Math, Statistics
Relevant Courses: Linear Algebra, Applied Algorithms, Data Modeling and Inference, Data Analysis and Mining, Artificial Intelligence

August 2022 – May 2026
Bachelor of Science in Computer Science
GPA: 3.79/4

Work Experience

SeaTrac, Marblehead, MA
Software and Testing Intern

May 2023 – Current

- Worked with the SeaTrac team to develop Arm versions of the boats software in C++ resulting in up to 50% power savings and increased sustainability during sea operations.
- Utilized data visualization tools and SQL querying to analyze and manage large volumes of boat data effectively, yielding valuable insights for decision-making.
- Assisted in training a yolo based object detection model using cloud-based systems and thousands of video frames captured from the boats
- Used the AWS API to manage multiple EC2 and RDS instances to ensure continuous runtimes for communication between the boats and operators

Indiana University, Bloomington, IN
Undergraduate Research Assistant

September 2023 – December 2023

- Collaborated with a professor, and a PhD student to develop an unsupervised model for predicting image frame representations from a simulated environment in Python.
- Trained a Variational Autoencoder to create representations of the simulated environment.
- Created a training and testing framework to feed the representations into a Reinforcement Learning algorithm and display the results.
- Implemented and tested multiple versions of Reinforcement Learning algorithms to assess their effectiveness.

Vives School of Applied Sciences, West Flanders, Belgium
Machine Learning Intern

May 2021 – August 2021

- Teamed up with professors on time series algorithm development, refining analytical, R and Python skills.
- Tested various time series models such as ARIMA and SARIMA as well as machine learning algorithms like RNNs, 1D CNNs, and XGBoost.
- Clearly conveyed findings and methodologies to both academic peers and faculty.

Skills

Languages: Python, C++, Java, SQL, JavaScript, R

Platforms: Linux, Unix, Windows

Libraries: Pandas, Numpy, Pytorch, LlamaCPP, Scikit-Learn, OpenCV, HuggingFace, Fast API, Flask

Cloud: AWS, GCP, Grafana | **Coding:** Data Analysis, API Integration, Machine Learning

Projects

Built LLM Agent for Image Manipulation

- Integrated a Functionary v2 model with the Llama CPP API for fast inference
- Used the Florence and ESDR models to manipulate the images
- Created tool calling framework to allow the LLM to execute the models
- Used WhisperCPP for speech to text recognition
- Created a web-based UI for the Agent with Gradio