Edward Dwight Foster Jr.

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Education

Indiana University, Bloomington, IN **August 2022 – May 2026**
Luddy School of Informatics, Computing, and Engineering *Bachelor of Science in Computer Science*
Minors: Business, Math, Statistics GPA: 3.79/4
Relevant Courses: Linear Algebra, Applied Algorithms, Data Modeling and Inference, Data Analysis and Mining, Artificial Intelligence

Work Experience

SeaTrac, Marblehead, MA **May 2023 – Current**
Software and Testing Intern

- 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 **September 2023 – December 2023**
Undergraduate Research Assistant

- 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 **May 2021 – August 2021**
Machine Learning Intern

- 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