Theodor Owchariw III

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https://theodorowchariw.github.io/Portfolio-Theodor/

Skills & Tools

- Programming Languages:
  Python, R, MATLAB, C++, C, Java
- AI & ML Domains:
  Computer Vision, Deep Learning, LLM Systems, Model Evaluation
- ML Frameworks & Tools:
  TensorFlow, PyTorch, Scikit-Learn, YOLO, Open CV
- Data & Pipelines:
  Pandas, NumPy, Feature Engineering, Data Preprocessing, ETL Workflows
- DevOps & Deployment:
  Linux, Git, Docker & Singularity, HPC workflows, GPU training & inference pipelines
- Systems & Hardware:
  Radar systems, Raspberry Pi, Circuit design, embedded integration

Education

December 2025
Master of Science:
Artificial Intelligence
National Science Foundation NRT-HDR Certificate:
Data Science
Florida Atlantic University
Boca Raton, Florida
GPA: 4.0

May 2024
Bachelor of Science:
Computer Engineering
Florida State University
Tallahassee, Florida
GPA: 3.401

Summary

Applied AI/ML Engineer with an M.S. in AI and B.S. in Computer Engineering. Focused on building end-to-end, production-ready systems. Experience developing computer vision and LLM-powered applications, designing full data pipelines, APIs, and deployment workflows. Strong background in Python, backend services, and ML systems, with a focus on integrating AI into functional products. Comfortable executing features from problem definition through delivery.

Applied AI Systems

LexEmetica Clerk – AI Legal Brief Generator
Florida Atlantic University | 2025
- Designed and built an LLM-based AI web application using retrieval-augmented generation, integrating external legal case APIs to generate grounded briefs with citation validation and hallucination mitigation
- Architected and implemented the FastAPI backend, integrating LLM inference, structured validation, and document generation pipelines into a single deployable system packaged with Singularity for reproducible HPC deployment
- Owned the system end-to-end from architecture and implementation through deployment and integration
- Tools: Python, FastAPI, Mixtral, Ollama, regex, Singularity, ReportLab, React, Tailwind CSS, Git

Deep Learning for Underwater Manatee Counting and Tracking (Master's Thesis)
Florida Atlantic University | 01/2025 – 12/2025
- Designed and built an end-to-end computer vision system for detecting and counting manatees in underwater imagery under severe data-scarcity conditions
- Architected a semi-supervised YOLO training pipeline combining human-labeled data with filtered pseudo-labels
- Built the full data ingestion, preprocessing, augmentation, and annotation pipeline and implemented repeatable training and evaluation workflows in a GPU-enabled HPC environment
- Owned the full system lifecycle from data pipeline design through model training, evaluation, and iteration
- Master's thesis published and archived in ProQuest and the Florida Atlantic University digital repository
- Tools: Python, YOLO, OpenCV, Albumentations, Linux, Git, HPC

Naïve Bayes Drowsiness Detection System
Florida State University | 2024
- Led the design and delivery of a machine learning driver drowsiness detection system using mmWave radar sensor data
- Architected and implemented the full signal processing and ML pipeline in MATLAB, including preprocessing, feature extraction, and classification

Languages

English: Native
Spanish: Intermediate

Honors & Awards

- Kathryn Diane Noussee Endowed Scholarship Fund (2025)
- FSU Dean's & President List (2023-2024)
- Dr. Gail Skofronick-Jackson Memorial Scholarship Recipient (2023-2024)
- Florida Academic Scholars Award – Bright Futures 100% Tuition Scholarship (2020)
- Seal of Biliteracy in Spanish (2020)

- Integrated the ML system into a physical embedded prototype, coordinating hardware, firmware, and model deployment
- Owned system integration, testing, and end-to-end delivery across a small engineering team, resulting in a working prototype combining sensor hardware, signal processing, and ML inference
- Tools: MATLAB, Position2Go mmWave FMCW Radar, 3D Printing

Forecasting Shark Populations Using LSTM Neural Networks
Florida Atlantic University | 2024

- Designed and built a spatiotemporal forecasting system to predict shark population trends based on species, location, and time
- Engineered temporal and spatial features including cyclical time encoding, location normalization, and categorical encoding for sequence modeling
- Built data ingestion, feature engineering, training, and evaluation pipelines for time-series forecasting
- Trained and evaluated an LSTM-based model achieving 91% validation accuracy on historical observation data
- Tools: R, TensorFlow, dplyr

Deep Learning for Identification of Toxic Plant Species
Florida Atlantic University | 2024

- Designed and built an end-to-end image classification system to identify toxic vs non-toxic plant species from real-world imagery
- Built the full data pipeline including dataset curation, preprocessing, augmentation, and training workflows over a 10,000-image dataset
- Trained, evaluated, and compared multiple CNN architectures (InceptionV3, ResNet-50, VGG-16) to select the best-performing model
- Implemented repeatable evaluation workflows, achieving 85% validation accuracy and establishing reliable benchmarking
- Tools: Python, TensorFlow, Pandas, OpenCV

Professional Experience

Graduate Research Trainee — National Science Foundation NRT-HDR Program
Boca Raton, Florida | 05/2024 – 08/2025

- Conducted applied AI/ML research by building and maintaining machine learning pipelines and experimental systems across multiple projects and domains
- Designed data preprocessing, training, and evaluation workflows used across computer vision, forecasting, and LLM-based systems
- Implemented reproducible ML environments using containerization and HPC workflows to support scalable experimentation
- Worked in cross-functional teams delivering ML components and contributing to system design and performance evaluation