

Trina Xavier

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EDUCATION

Masters in Data Science

University of Massachusetts Dartmouth, Dartmouth, MA

May 2025

Relevant Courses: *High Performance Scientific Computing, Advanced Mathematical Statistics, Advanced Machine Learning, Database Design, Applied Business Analytics and Info Visualization, Advance Data Mining*

Bachelor of Technology in Electronics and Communication Engineering

TKR College of Engineering and Technology, Hyderabad, India

Jun 2023

WORK EXPERIENCE

Aloft Systems, Boston, MA

Robotic Sail Simulation Intern

Jun 2025

- Build machine-learning model that fuse synchronized wave imagery, anemometer readings, and Doppler-Lidar VAD scans to derive wind shear and forecast wind speed and direction 15 seconds ahead at the ship's sail.

School for Marine Science and Technology, New Bedford, MA

Machine Learning Intern – The Marine Fisheries Field Research Group

May 2025

- Engineered an automated pipeline to convert multi-year Tator CSV annotations into VIAME format and fine-tuned CLI detection thresholds, confidence scores, and non-max suppression to build a robust computer vision model—improving recall and precision on Northeast U.S. Atlantic Sea scallop drop-camera surveys.

University of Massachusetts Dartmouth, Dartmouth, MA

Graduate Teaching Assistant

Jan 2025 – May 2025

- Served as TA for MIS 674: Applied Business Analytics and Information Visualization—graded assignments and led weekly mentoring on Tableau-based data visualization, KPI identification, and dashboard storytelling to help students deliver actionable insights.

UMassD's Leduc Center

Civic Engagement Coordinator & Student Leader

Jan 2024 – May 2025

- Led in building quarterly Power BI reports that reliably tracked over 200 weekly volunteers using GivePulse data, increasing accuracy by 20% and optimizing resource allocation.

UMassD's STEM Learning Lab

Academic Tutor and Mentor

Dec 2023 – May 2025

- Tutored 15 STEM students weekly, delivering personalized support and interactive feedback to enhance academic performance; analyzed TutorTrac utilization data to optimize lab scheduling and boosted STEM lab usage by 30%.

IIT Tirupati, Smart Knower, Hyderabad, India

Data Analyst Intern

Dec 2022 - Mar 2023

- Built an interactive Tableau dashboard visualizing key attrition drivers and trained a hyperparameter-tuned XGBoost model (5-fold CV) with 91% turnover-prediction accuracy, enabling targeted retention strategies.

PROJECT EXPERIENCE

Benchmarking Transformer & CNN Ensemble for Imbalanced Skin Lesion Classification

May 2025

- Developed and benchmarked four PyTorch pipelines—combining Swin Transformer variants with a ResNet50-EfficientNet ensemble—and applied class-balanced sampling, Mixup/CutMix augmentations, and SAM+EMA optimizers to the HAM10000 dataset, significantly boosting macro-F1 performance.

GPU-Accelerated 3D Diffusion Monte Carlo Solver- Python, Scientific Computing, GPU Acceleration

Dec 2024

- Developed a GPU-accelerated Monte Carlo approach in Python to solve the 3D diffusion equation, validating accuracy against analytical solutions and achieving a 49x speedup for large-scale pollutant dispersion simulations

AI-Powered Dialect Classification- Librosa, PyTorch, NLP, Data Wrangling & Augmentation, Deep Learning

Sep 2024

- Built and optimized a Wav2Vec2 model for English dialect classification, achieving 90%+ accuracy in forensic and voice AI applications.

Hospital Database Management System- MongoDB, Python, Data Modeling, Bootstrap, Flask

May 2024

Developed a full-stack Hospital Management System with Python, MongoDB, SQL, Flask, and Bootstrap, enabling secure, scalable CRUD operations for patient management and medical records.

SKILLS

Technical Skills: Python, R, MATLAB, SQL, C++, Java, React, MongoDB, Tableau, REST API, PyTorch, AI/ML, TensorFlow, NLP, LLMs, Git, Linux, PowerBI, Data Storytelling, Statistical Analysis, Databricks, SQL, Python, Airflow, Agile/Scrum

Soft Skills: Leadership, Communication, Problem-Solving, Project Management, Mentoring, Team Collaboration