

# Trina Xavier

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## EDUCATION

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### 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

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### Aloft Systems, Boston, MA

#### Robotic Sail Simulation Intern

**Jun 2025**

- Build machine-learning models 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**

- Led weekly mentoring sessions and graded assignments on data visualization, data validation, KPI development, and dashboard storytelling, equipping students to deliver actionable business intelligence insights.

### UMassD's Leduc Center

#### Civic Engagement Coordinator & Student Leader

**Jan 2024 – 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 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

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### Benchmarking Transformer & CNN Ensemble for Imbalanced Skin Lesion Classification

**May 2025**

- Engineered four PyTorch-based deep-learning pipelines (Swin Transformer variants & ResNet50–EfficientNet ensemble) with class-rebalanced sampling, Mixup/CutMix augmentation, and SAM+EMA optimization—achieving a 0.92 validation and 0.89 test macro-F1 on the imbalanced HAM10000 skin-lesion dataset.

### 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 using Librosa and PyTorch 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

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**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, ETL data pipeline

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