

JAYESH TRIPATHI

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EDUCATION

Texas A&M University

Master of Science, Computer Science

December 2023

Texas A&M University

Bachelor of Science, Computer Science

August 2021

TECHNICAL SKILLS AND TOOLS

Programming Languages

C++, Javascript, Java, R, Python, SQL, Ruby, Scheme

Framework and Libraries

PyTorch, Tensorflow, SciKit-Learn, SciKit-Multiflow, Pandas, CGAL, Boost, GEE

EXPERIENCE

Texas A&M University

College Station, Texas

Graduate Research Assistant

Towards Explainable Drift Detection and Early Retrain in ML-based Malware Detection Pipelines

- Created a methodology to identify and explain dataset drift, and proposed a schema for effective retraining.
- Modified traditional architecture to explain the reasoning behind every drift observed in temporally variant datasets, and anticipate drift before it occurs.
- Proposed a schema for retraining machine learning models by targeting drift before it occurs, to sustain the performance of the Machine Learning models.
- Demonstrated improved performance over time of machine learning models by utilizing the proposed architecture on the DREBIN and AndroZoo Datasets
- Paper published at Conference on Detection of Intrusions and Malware & Vulnerability Assessment, 2025 (Graz, Austria)

Utilizing Surface Reconstruction and Photogrammetry to Construct Water-Body Mesh

- Developed a methodology utilizing Photogrammetry and Surface Reconstruction Algorithms (Python) to create 3D Meshes for bank structures (Images) and underwater sea beds (Scanned GIS Data-Points); stitching the meshes to construct comprehensive 3D virtual structures for water body analysis.
- Applied in post-disaster response scenarios to analyze and track changes in water bodies effectively

Building Damage Assessment Dataset for NADIR Imagery from Hurricane Disaster

- Collected post-disaster imagery of damaged buildings from the Satellite and Crewed expedition
- Created an annotation project on Labelbox to annotate the type and level of damage affecting the buildings
- Conducted mass annotation workshops with high school students in collaboration with high school administrators in Texas and Pennsylvania
- Published a dataset on Hugging Face containing annotations of 10,000 buildings, documenting types of damage sustained during hurricanes, enabling advanced analysis in disaster recovery, structural damage assessment, and risk modelling
- Paper published at ACM Conference on Fairness, Accountability, and Transparency, 2025 (Athens, Greece)

Indian Institute of Technology, Delhi

New Delhi, India

Project Scientist

Forest Cover Modelling for Carbon Credit Estimation during REDD+ Activities

- Implemented temporal models to estimate and predict forest cover change using satellite imagery
- Estimated the biomass of a given forest region based on surveys collected on the ground
- Estimated change in carbon weight and carbon credits generated through the activities
- Demonstrated the results for Adhapalli, Pangatira, and Kampulei village sites in Dhenkanal, Odisha
- Currently being integrated into CoRE Stack as part of the pipeline to assist in forest and wildlife monitoring.

EXTRA CURRICULAR

Multi Greek Council, Texas A&M University

May 2020 – August 2021

- Spearheaded the organization, as **Director of Service** and organized the Clothing Donation Drive for Fall 2020

Chi Psi Beta Fraternity Inc., Texas A&M University

August 2017 – August 2021

- Raised over **\$10,000** annually for the National Alliance for Mental Illness through events like a bake sale & silent walk