

EDUCATION

Stevens Institute of Technology, Hoboken

M.S. Applied Artificial Intelligence 2024-2026

- GPA: 3.945 / 4.0
- Relevant Coursework : Deep Learning, Applied Machine Learning, Pattern Recognition and Classification

Indian Institute of Information Technology, Design and Manufacturing, Kancheepuram

B. Tech. Mechanical - Smart Manufacturing 2017-2021

- CGPA: 8.04 / 10

SKILLS

- Languages : Python, C++, PL/SQL, Bash Scripting
- Libraries : TensorFlow/Keras, Scikit-learn, NumPy, Pandas
- Tools : MATLAB/Simulink, Oracle 19c Database
- Professional Skills: Research, Data Analysis, Literature Review, Technical Writing

RESEARCH EXPERIENCE

Stevens Institute of Technology, Hoboken

Research Assistant April 2025 - Present

- Currently exploring use cases of a Joint-Embedding Predictive Architecture (JEPA) to learn powerful representations from the complex, longitudinal NHATS (National Health and Aging Trends Study) dataset to predict future health states.

WORK EXPERIENCE

Tata Consultancy Services

Database Administrator December 2021 - August 2024

Project : National Pension System (NPS) & Atal Pension Yojana (APY)

- Optimized Oracle 19c Database performance and ensured high availability.
- Implemented and managed critical features including Oracle In-Memory and Database Vault.
- Engineered a robust data protection strategy, reducing potential data loss and successfully demonstrating a recovery time of under 30 minutes in disaster drills.
- Administered schema management and oversaw database lifecycle management, including patching and upgrades, ensuring regulatory compliance.

Aero2Astro

Computer Vision Intern May 2021 - November 2021

- Analyzed OpenCV's feature extractors on diverse camera datasets to optimize performance for autonomous drone navigation in varied lighting conditions.
- Researched and authored a comparative report on state-of-the-art SLAM algorithms.

PROJECTS

3D Point Cloud Reconstruction on ShapeNet Dataset

- Engineered a data pipeline in Python using h5py and numpy to process over 50,000 point cloud samples from the ShapeNet dataset, enabling efficient handling of computationally intensive 3D data.
- Designed and implemented a 3D autoencoder in TensorFlow/Keras, architected to compress each 2048-point cloud into a dense 128-dimensional latent vector.
- Trained the model over 50 epochs, optimizing for minimal reconstruction error and achieving a final validation loss of approximately 0.015.
- Achieved a powerful, compressed representation of 3D objects, resulting in a 16x dimensionality reduction while maintaining high-fidelity geometric features.
- Developed 3D visualizations using matplotlib and open3d to qualitatively assess and confirm the high quality of the reconstructed shapes compared to the originals.

Automated Source Code Classification Using Long-term Recurrent Convolutional Networks

- Developed an automated system to classify over 65,000 source code samples by programming language (6 categories) and algorithm type (13 categories).
- Designed and implemented a hybrid CNN-LSTM (LRCN) model to process code syntax and semantics directly, eliminating the need for manual feature engineering.
- Engineered a full data pipeline that scraped samples from GitHub and performed preprocessing, including tokenization and sequence padding.
- Achieved 96% accuracy for language classification and 88% for algorithm identification, outperforming SVM-based methods by 7% and delivering 2x faster inference than AST-based models.