Devadarshini Pazhanivel Thenmozhi

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Education

Northeastern University May 2026
MS - Artificial Intelligence Boston, MA
- *Coursework: Foundations of AI, Algorithms, Machine Learning*

Easwari Engineering College May 2024
B.Tech - Artificial Intelligence and Data Science; GPA: 9.18 out of 10 Chennai, India
- *Coursework: Machine Learning Techniques, Deep Learning, Reinforcement Learning*

Technical Skills and Certifications

Languages: Python, Java, C, SQL, R, HTML, CSS

Developer Tools: Jupyter, PyCharm, IntelliJ, Git, VS Code, MS Office, AWS, Tableau, Knime , Latex

Skills: Machine Learning, Computer Vision, Deep Learning, Data Analytics and Visualization, GUI Development

Libraries: NumPy, Pandas, OpenCV, Seaborn, Tensorflow, Pytorch, Keras, Scikit Learn, Xgboost, Tkinter

Experience

Deep Learning Intern Jul 2023
National University of Singapore (NUS) Singapore
- Collaborated with researchers at NUS to build **VizCap**, a real-time image captioning with **ResNet and LSTM** delivering **50+ captioned images/sec** for the visually impaired.
- Implemented training on **30,000+ image-caption pairs** integrating GloVe 300D embeddings and custom preprocessing.
- Achieved **BLEU score of 0.62** on Flickr30k images; conducted data preprocessing and model evaluation.

Artificial Intelligence Intern Jan 2023 – Mar 2023
VLOG Innovations Chennai, India
- Trained a **YOLOv5 model** to detect 6 defect types including mouse bites, shorts, and missing holes, enhancing **micro-defect detection** accuracy in PCB inspection.
- Designed and deployed a Tkinter GUI to visualize detections and compute severity scores across **100+ PCB samples**, improving inspection efficiency for industries.

Projects

Fetal Health Risk Prediction and Patient Clustering | *Python, KMeans* Jan 2025 - Apr 2025
- Processed and analyzed CTG datasets **2,126 records** to predict fetal health risk scores with 22 features.
- Clustered patients using UMAP + KMeans and Hierarchical Clustering, with **silhouette scores up to 0.53**, aiding in personalized clinical decision-making.

AI-powered Sports Video Highlight Generation | *Python, ResNet50, LSTM* Oct 2024 - Dec 2024
- Developed a deep learning system using **ResNet50 and LSTM** to auto-generate soccer highlights, classifying goals/fouls and ranking key moments in **25 full-match datasets**.
- Deployed temporal segmentation and stitching logic to compile over **500+ personalized highlight clips**, enabling user-specific content preferences.

Oral Tissue Compatibility for Dental Implants | *Python, CNN, XGBoost* Oct 2023 - May 2024
- Achieved **90.32% accuracy** in predicting dental implant success by integrating ultrasonography with advanced machine learning models.
- Facilitated **Deep Belief Networks (DBN)** and **ResNet-based CNNs** for feature extraction from **3,237 augmented images**, boosting performance through ensemble learning with **XGBoost**.

Research and Publications

Cognitive Defense Cyber Attack Prediction and Security Design in ML Model *(ref)*
IEEE Jan 2024
- Presented a novel machine learning framework combining cognitive defense and anomaly detection, improving cyber attack prediction accuracy by **97%** and enhancing resilience against advanced threats.

IoT–based Smart Home Automation Systems for Energy Conservation *(ref)*
IEEE Oct 2023
- Introduced an IoT-powered automation system that reduced household energy consumption by **150 kWh**, optimizing appliance usage through intelligent control.