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 Nov 2020 - 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: Tableau, Knime, Weka, VS Code, MS Office, PyCharm, IntelliJ, Microsoft Azure, AWS, Jupyter

Skills: Data Analytics, Machine Learning, Data Visualization, Deep Learning

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

Experience

Deep Learning Intern July 2023
National University of Singapore (NUS) Singapore
- Developed **VizCap**, a real-time image captioning and speech generation system for the visually impaired, using **ResNet and LSTM architectures**.
- Achieved an **average BLEU score of 0.62** on **31,000 Flickr30k images** and reached real-time inference speeds of **50+ images/sec**.

Artificial Intelligence Intern Jan 2023 – Mar 2023
VLOG Innovations Chennai, India
- Engineered an automated PCB defect detection model using **OpenCV** and **SSIM**, successfully identifying critical flaws like mouse bites, open circuits, shorts, and spurs across **100+ PCB samples**.
- Enhanced detection accuracy by applying **morphological operations** (dilation, erosion, opening, closing) in **5+ defect types** to minimize noise and isolate structural anomalies.

Projects

Fetal Health Risk Prediction and Patient Clustering | *Python* Jan 2025 - April 2025
- Built a ML system for fetal risk prediction using **2,126 cardiotocography (CTG) records** with 22 clinical 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* Oct 2024 - Dec 2024
- Pioneered an AI-based system for automatic soccer highlight generation by leveraging **CNN and LSTM models** to detect and rank key events such as goals and fouls across **25 full-match datasets**.
- Integrated intelligent video segmentation and compilation of **500+ event clips**, enabling **customizable highlight preferences** and delivering a streamlined, personalized viewing experience.

Oral tissue compatibility for dental implants | *Python, Grad CAM* Oct 2023 - May 2024
- Achieved **90.32% accuracy** in predicting dental implant success by integrating ultrasonography with advanced machine learning models.
- Combined **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
- Deployed three machine learning models with up to **97% accuracy**, integrating cognitive **defensive strategies, encryption, and intrusion detection**, and outperforming baseline models in cyber threat prediction tasks.

IoT–based Smart Home Automation Systems for Energy Conservation ***(ref)***
IEEE Oct 2023
- Enhanced a smart home prototype that reduced energy usage by **150 kWh** through intelligent control of lighting, heating, and cooling systems.