

Nihal Mathew Sashikumar

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EDUCATION

Northeastern University, Boston, MA Jul 2023
Masters in Computer Engineering (Machine Learning, Computer Vision and Algorithms) GPA: 3.55/4
Relevant Courses: Machine Learning, Image Processing, Data Visualization, Reinforcement Learning

Anna University, Chennai, India Jun 2021
Bachelor of Engineering in Electronics and Communication GPA: 8.48/10
Relevant Courses: Data Structures and Algorithms, Probability Theory and Random Process, Calculus I and II, Programming in Python, Digital Signal Processing, Computer Architecture.

SKILLS

Programming Ecosystem: Python, C, C++, SQL, Tableau, MATLAB, Embedded C, Arduino, Verilog and ROS
Frameworks: TensorFlow, Keras, Numpy, Pandas, Sci-kit Learn, OpenCV, OpenCL, OpenGL, Seaborn, Pytorch, CNN
Specialties: Deep Learning, Machine learning, Computer Vision, Reinforcement learning and Business Analytics

WORK EXPERIENCE

Graduate Teaching Assistant, College of Engineering, Boston, MA Sep 2021 - Present
• Mentoring, grading, and conducting code reviews for 80+ students in lab for Fundamentals of Digital Design/Computer Organization.

Machine Learning Intern (R&D), General Electric Healthcare, Bangalore, India Apr-Aug 2019
• Built a Convolutional Neural Network utilizing Pytorch which classifies bone intensity levels to identify osteoporosis from other five less fatal conditions.
• Performed data augmentation to generate diverse dataset consisting of informative fragmented images from x-ray and achieved 83% accuracy.

Research Intern, ICAM University, Lille, France May- Jul 2018
• Designed and Prototyped solar cars controlled by automated remotes to create 16 miniature cars leveraging 3D printed components with a team of sixteen members from interdisciplinary departments.
• Analyzed and compared efficacy of cars operating in solar power as a secondary battery source.

ACADEMIC PROJECTS

Automated Fabric Defect Detection and Classification: A Deep Learning Approach Feb 2021
• Developed two deep learning models deploying Convolutional Neural Network (CNN) and Generative Adversarial Network (GAN) to detect and label occurrence of 6 different fabric defects from textile images.
• Implemented the two different models using TensorFlow to predict localized fabric defects.
• Performed data augmentation and applied transfer learning on fabric images utilizing inception modelling to distinguish the region of interest with a dataset of 500,000 plus images.

Skin Lesion Characterization with Ensembles of Machine Learning and Deep Learning Models Oct 2020
• Incorporated Machine Learning classifiers using Support Vector Machine (SVM), K-Nearest Neighbour (KNN), Bagged/Boosted decision tree and deep learning model using CNN to detect different skin diseases.
• Presented a comparison between both techniques for classifying nine different skin lesions including malignant melanoma and achieved an accuracy of 90.2% after model training and validation.

RESEARCH PAPER

• "Automated Fabric Defect Detection and Classification: A Deep Learning Approach", Dec 2021
TLR International Journal. <https://doi.org/10.31881/TLR.2021.24>

• "Skin Lesion Characterization with Ensembles of Machine Learning and Deep Learning Models", Jul 2021
LNEE Springer Publication. https://doi.org/10.1007/978-981-16-1476-7_25

LEADERSHIP AND AWARDS

• Awarded as the **Best Student of The Year** (LICET STAR). Mar 2021

• Led a team of ten interns as a **Project Manager** for a university funded project called virtual electronic mess coupon. Jan 2020

• Served as the **Department Captain** of Electronics and Communication Engineering. Jun 2019