SURYA TEJA DEVARAKONDA
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EDUCATION

UNIVERSITY OF MASSACHUSETTS AMHERST
Master's in Computer Science, September 2017 – May 2019

INDIAN INSTITUTE OF TECHNOLOGY HYDERABAD, INDIA
Bachelor of Technology, Electrical Engineering, August 2013 – May 2017

EXPERIENCE

GE HEALTHCARE | Machine Learning Intern
June 2018 – August 2018
• Developed a classifier to predict anterior-posterior or posterior-anterior nature of Chest X-Ray images using transfer learning.
• Developing deep learning models including UNets, DenseNets and Conditional-GANs for bone suppression in single energy Chest X-Ray images.

IISC BANGALORE SPECTRUM LAB | Computer Vision Research Intern
May 2016 – July 2016
• Worked on multi-class abnormality detection and segmentation of wireless capsule endoscopy images.
• Built convolution neural network based models, while dealing with challenges like data insufficiency (train data of only around 100 images) and class imbalance. Achieved an AUC of 80% while improving upon the state-of-the-art results for 5 of the 9 considered diseases.

PUBLICATIONS

Amplitude-scan Classification using Artificial Neural Networks
*Kunal K. Dansingani, Kiran Kumar Vupparaboina, **Surya Teja Devarakonda**, Soumya Jana, Jay Chhablani, and K. Bailey Freund*
Scientific Reports (Nature), 2018, 8(1), p.12451.

A Convolutional Neural Network Approach for Abnormality Detection in Wireless Capsule Endoscopy
*Anjany Kumar Sekuboyina, **Surya Teja Devarakonda**, and Chandra Sekhar Seelamantula*
Proceedings of IEEE International Symposium on Biomedical Imaging (**ISBI**), 2017, (pp. 1057-1060)

PROJECTS

Ultrasound Image Segmentation and Classification of Thyroid Nodules
January 2018 – May 2018
• Worked on detecting and characterizing thyroid nodules from ultrasound images using the TI-RADS ultrasound features. Developed image segmentation models using architectures like U-Nets and densenets with dilated convolutions. Achieved an average dice coefficient of 85%.
• Done in collaboration with Dr. Anthony Samir of the MGH/MIT Center for Ultrasound Research and Translation (CURT) lab at the Massachusetts General Hospital (MGH), Boston.

Genetic Mutation Classification using Natural Language Processing for Cancer Treatment
September 2017 – December 2017
• Developed a multi-class classifier to predict 9 different cancer types of genetic mutations using text based clinical evidence, that are in the form of conference papers.
• Employed Word2Vec, Doc2Vec, etc., and deep learning techniques like 1D CNNs, LSTMs, etc for classification.

Medication Recommendation System using Reinforcement Learning
September 2017 – December 2017
• Developed a recommendation system for backpain medication using a weighted directional graph of relations between multiple causes, effects and medications.
• Modelled the graph as a Markov Decision Process and used reinforcement learning techniques like SARSA and Q-Learning for predicting the optimal medication plan in the least time possible.

COURSES

Machine Learning*, Reinforcement Learning, Algorithms for Data Science, Probabilistic Graphical Models, Database Design and Implementation, Natural Language Processing*, Computer Vision*, Advanced Digital Signal Processing, Data Science for Internet of Things, Random Processes, Multivariable Calculus

TECHNICAL SKILLS

Languages: C, C++, Java, Python, R, MATLAB, SQL
Module Familiarity: Tensorflow, PyTorch, Keras, Scikit, OpenCV