Surya Teja Devarakonda

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Education

Univ. of Massachusetts Amherst
M.S. in Computer Science
Expected May 2019
Cum. GPA: 4.0 / 4.0

IIT Hyderabad, India
B.Tech. in Electrical Engineering (Honors)
Grad. August 2017
Cum. GPA: 3.41 / 4.0

Skills

Programming
Computer Languages:
C • C++ • Java
Scripting Languages:
Python • MATLAB • R • Shell • LaTeX
Library Familiarity:
Keras • Tensorflow • OpenCV • Scikit-learn
Database Familiarity:
SQL

Coursework

Graduate
Probabilistic Graphical Models
Neural Networks: A Modern Introduction
Reinforcement Learning
Algorithms in Data Science

Undergraduate
Pattern Recognition & Machine Learning
Data Intelligence
Image and Video Processing
Introduction to Database systems
Monte Carlo Estimation using Bayesian Networks
Data Science for Internet of Things

Links

LinkedIn: linkedin.com/in/suryatejad
Github: https://github.com/suryatejadev

Experience

IISc Bangalore Spectrum Lab
Computer Vision Research Intern | May 2016 – July 2016
- Worked on image segmentation for abnormality detection in endoscopy images.
- Developed convolution neural network models (CNNs), while dealing with challenges like data insufficiency, class imbalance, etc.
- Achieved a considerable improvement over the state of the art, with 80% Area under ROC Curve. Conference paper accepted at ISBI, 2017.

IIT Hyderabad Immersive Multimedia Lab
Undergraduate Researcher | Jan 2016 – April 2017
- Worked on multi-class classification for detecting retinal abnormalities in OCT B-scan retinal images.
- Developed efficient supervised models using frameworks like artificial neural networks, support vector machines, decision trees and ensemble methods.
- Conference paper accepted at INDICON, 2016.

Projects

Ultrasound Image Segmentation and Classification of Thyroid Nodules January 2018 – Present
- Working on a computer vision problem of image segmentation for detecting and characterizing thyroid nodules from ultrasound images using the TI-RADS ultrasound features.
- Developing image segmentation architectures using U-Nets and dilated convolutions. This project is in collaboration with 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 cancer types of genetic mutations using text based clinical evidence, which in the form of relevant conference papers.
- Employed Natural Language Processing techniques like Word2Vec, Doc2Vec, etc., for training word embeddings 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.
- Modeled the graph as a Markov decision process and used reinforcement learning techniques like SARSA and Q-Learning for predicting optimal medication.

Publications

- S. T. Devarakonda, K. K. Vupparaboina, A. Richhariya, J. Chhablani, and S. Jana, "Automated Detection of Retinal Disorders from OCT Images using Artificial Neural Network" in Proceedings of 13^{th} International IEEE India Conference (INDICON), 2016
- A. K. Sekuboyina, S. T. Devarakonda, and C. S. Seelamantula, "A Convolutional Neural Network approach for Abnormality Detection in Wireless Capsule Endoscopy" in Proceedings of IEEE International Symposium on Biomedical Imaging (ISBI), 2017