

Sailalitha Gollapudi

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EDUCATION

- **University of Pennsylvania** GPA :3.7/4.0
 - **Master's in Artificial Intelligence & Robotics** Aug'18-May'20
 - **Relevant Coursework:** Machine Learning, Statistics and Probability, Introduction to Robotics, Kinematics, Vision, Control for Robotics, Deep Learning, Signal Processing, Introduction to Data Science.
- **Anna University** GPA :3.7/4.0
 - **Bachelor's in Mechanical Engineering** Aug'14-May'18
 - **Relevant Coursework:** Introduction to Programming, Numerical Methods, Engineering Management, Aerial Robotics

KEY SKILLS

Languages: Python, C, MATLAB, embedded C, C++, SQL, SQLite3.
Software/Libraries: Simulink, Arduino, TensorFlow, PyTorch, Keras, OpenCV, Scikit-learn, Kivy, Linux, NumPy, Pandas.
Framework: AWS-S3, Git, ROS.

EXPERIENCE/INTERNSHIPS

SOFTWARE DEVELOPER INTERN, NextStep Robotics

May'19-Aug'19

- Performed sensors data parsing, manipulation, transformation and analytics to generate metrics.integrated app features to enhance Robot User Interface.
- Embedded and validated Machine learning algorithm (Logistic regression) on robot firmware to predict patient health.
- Developed automation scripts for testing robot in accordance to FDA approval standards.
- Created RDBMS database platform for internal query applications using AWS-S3 for data warehousing and optimized query time for integration with GUI. Worked in Peer-reviewed and agile environment.

MACHINE LEARNING RESEARCH ASSISTANT, Grasp lab –Lifelong Machine learning

Aug'19-Ongoing

- Evaluate features for detection of Retinopathy in slit image - pediatric ophthalmology images.
- Performing data manipulation for identification of ROP, employing GAN's for data augmentation and bias reduction.

RESEARCH ASSISTANT, Grasp lab – Rehabilitation Robotics

Dec'18-Mar'19

- Created protocol for data collection in hernia operation sequencing on the Davinci intuitive robot. Data Annotation of frames to enable event detection.
- Built a Theradrive version 2 model for stroke rehabilitation, worked on control method enhancements for resistive training.

PROJECTS/RESEARCH

DEEP LEARNING -SEGMENTATION AND DETECTION

Feb'19-Apr'19

- Employed data mining, preprocessing, wrangling and augmentation on 3d CT scans for binary classification of cancerous lung nodules.
- Implemented localization-based segmentation to rescale images and improve model performance on GPU.
- Applied low memory Deep learning Networks- Squeeze Net, Mobile Net (depth wise spatial convolution) and performed comparison with traditional 2D convolutional network.
- Verified diagnostic ability using specificity, sensitivity and AUC score. Achieved 89% accuracy and 91% AUC score.

SIMILARITY DETECTION IN ULTRASOUND IMAGE

Jun'19-Jul'19

- Implemented Dice loss function and cosine similarity metric for filtering contradictory train images.
- Extracted spatial correlation and thresholding using histogram intensities for detecting falsely annotated labels.
- Employed U-net and FCNN models to achieve a 0.6 dice score on U-net.

SENTENCE TOXICITY IDENTIFICATION

Jun'19-Aug'19

- Performed feature engineering and information refining by reducing for unintended bias to detect toxicity in a sentence.
- Extracted context feature maps using transfer learning from genism models.
- Implemented natural language processing models -LSTM,LSTM +BERT on jigsaw dataset achieving 0.93 and 0.92 score on Kaggle.

VISION BASED ROBOT MOBILITY

Jan'17-Apr'18

- Built Custom dataset of litter images by accounting for bias in brightness and orientation to develop autonomous beach cleaning robot.
- Implemented video frame extraction for object detection(litter) in real-time robot movement using deep learning algorithms in Keras.
- Established communication pipeline (UART) between robot controller and video stream for autonomous robot mobility.

ADDITIONAL PROJECTS

Kmeans – clustering, Unsupervised learning .6 DOF pose estimation using deep learning. Background subtraction from Ad's featuring car. Real time tracking of forearm rehabilitation. Feature matching using SURF techniques. Neural network-based localization of robot. Exploratory data analysis. Breast cancer prediction using Adaboost, Ensemble and SVM algorithms. Reinforcement learning on pacman. Linear regression