

# Sairam Tabibu

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## EDUCATION

**University of Washington, Seattle — UW College of Engineering, Seattle, WA**

*Master of Science in Electrical and Computer Engineering*

Sept. 2019 – Mar. 2021 (expected)

Selected coursework - Intro to Artificial Intelligence for mobile robots, Machine Vision, Machine Learning

**Indian Institute of Technology(BHU), Varanasi, Varanasi, India**

GPA-3.5/4

*Bachelors of Technology in Electronics Engineering*

Jul. 2013 – May. 2017

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## WORK EXPERIENCE

**Deep Learning Program Mentor, Great Learning**

*Bangalore, India*

Nov. 2018 – May. 2019

- Mentored working professionals by teaching them Computer Vision and Machine Learning concepts.
- Created assignments covering projects of Face and object detection and graded them.

**Research Fellow, IIIT, Hyderabad India**

*Cancer detection and Survival Prediction using Deep learning*

Nov. 2017 – Mar. 2019

- Spearheaded and developed a fully automated model which detected kidney Cancer and it's sub-types from tissue slide images (Gigapixel Images) using Deep learning. **Paper published in Nature Scientific reports.**
- Designed and Implemented a novel Directed Acyclic graph based SVM model to be used on top of Deep learning model to deal with Data Imbalance which increased the classification accuracy by 6-7%.
- Developed a survival prediction system (5 years) using a COX Regression model trained on the features extracted from the Deep Net without any human intervention.

**Research Intern, NTU, Singapore**

*Infrared Image processing and vessel detection in Maritime Environment*

May. 2016 – Jul. 2016

- Developed a automated Ship tracking system using IR cameras along the Singapore coastline with possible variations in orientation, shape, distance and surrounding effects. **Project Report**
- Improved the object detection system by implementing the Selective search method (Graph based object segmentation followed by grouping based on location, shape, color of the object).
- Implemented and trained VGG nets on the IR images to extract relevant features and used SVM's for classification.

**Research Intern, Changwon National University, South Korea**

*Real time Face recognition based on Embedded Systems*

May. 2015 – Jul. 2015

- Spearheaded the project on improving and deploying a Real time face recognition algorithm on Embedded systems such as Raspberry Pi to be deployed as a low cost product. **Project presentation**
  - Designed a system by implementing a model which extracted higher order Local derivative patterns from face and used Histogram matching for recognition.
  - Improved upon the accuracy by using transforms such as Adaptive Histogram equalisation to bring illumination in-variance and increased the accuracy by 7-8%.
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## RESEARCH PROJECTS

**Hand gesture Recognition on Indian Sign language**

*Guide: Dr. Kishor Sarwadekar, Assistant Professor, IIT BHU*

Dec. 2016 – May. 2017

- Implemented a geometric based feature method to extract hand gesture removing any ring artifact.
- Designed a custom 5 layer Neural network for feature extraction and classification.

**Lexical and visual analysis of social media posts**

*Guide: Dr. Erik Cambria*

Jan. 2017 – Apr. 2017

- Spearheaded the project on developing a system to detect whether a social media post requires empathetic response.
- Designed and Implemented a pipeline to extract hand crafted features (both verbal and visual features) and used Logistic Regression and Random forest for classification achieving 80% accuracy. **Paper accepted in FLAIRS'17.**

**Multi-modal analysis for deception detection**

*Guide: Dr. Erik Cambria*

Sep. 2016 – Dec. 2016

- Developed a data-driven method for automatic deception detection in real-life trial data.
  - Implemented an automated pipeline to extract the visual cues (face expressions, color attributes etc.) and verbal cues (utterances etc.) and did a Decision level fusion using SVM on top of these features for classification.
  - Achieved an accuracy of 78% surpassing the Human level accuracy(58-60 %) by more than 15%. **Paper accepted in ICDM workshop'16.**
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## Summary of Qualifications

**Interests:** Computer Vision, Machine Learning, Deep Learning, Artificial Intelligence

**Software and Languages:** Python, C++, C, R, Matlab,  $\text{\LaTeX}$

**Embedded Platforms:** Raspberry Pi, Arduino

**Packages and Framework:** Pytorch, Keras, Tensorflow, Numpy, Scikit-learn, OpenCV, MatConvnet

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