
EDUCATION

- | | |
|--|----------------------|
| University of California, San Diego | 2016-2018 |
| <ul style="list-style-type: none">MS in Electrical and Computer Engineering; Major: Signal and Image Processing | GPA: 3.94/4.0 |
| <ul style="list-style-type: none"><i>Coursework:</i> Big Data Analysis using Spark, Topics in Vision and Learning, Convex Optimization, Statistical Learning I-II, Parameter Estimation I-II, Information Theory. | |
| Indian Institute of Technology, Gandhinagar | 2010-2014 |
| <ul style="list-style-type: none">B.Tech.(Honors) in Electrical Engineering with Minor in Computer Science | GPA: 9.50/10 |
| <ul style="list-style-type: none"><i>Coursework:</i> Artificial Neural Networks, Artificial Intelligence, 3D Computer Vision, Probability and Random Processes, Computational Complexity Theory, Algorithms and Data Structures, Discrete Mathematics, Linear Algebra. | |
| <ul style="list-style-type: none"><i>Awards:</i> Gold Medal, Medal for best performance in Mathematics, Academic excellence scholarship, Dean's list. | |

EMPLOYMENT

- | | |
|--|---------------------|
| Statistical Visual Computing Lab, UC San Diego | 2017-Present |
| <i>Mentor:</i> Prof. Nuno Vasconcelos | |
| <ul style="list-style-type: none">Worked on the improvement of generalization and invariance of classifiers using Generative Adversarial Networks (GANs).Implemented and analyzed the performance of the state-of-the-art CNNs supplemented with GANs in the semi-supervised setting. | |
| Electronics and Radar Development Establishment, DRDO, Bengaluru, India | 2014-2016 |
| <i>Research Scientist</i> | |
| <ul style="list-style-type: none">Implemented fuzzy inference system for classification of radar targets.Developed software for real time radar health monitoring and performance analysis by processing the radar data cube in C++.Worked on implementation and testing of radar signal processing algorithms viz. Maximum Likelihood Angle Estimation, Pulse Compression, Constant False Alarm Rate (CFAR) detection, Digital Beam Forming, Doppler filtering on Active Array Radars, target tracking using Kalman filter. | |

RESEARCH WORK AND PUBLICATIONS

- | | |
|---|--------------------|
| Time- Frequency Localization using Functional Link Artificial Neural Networks (FLANNs) | Spring 2013 |
| <ul style="list-style-type: none">Publication: S. Tyagi, V. Katre and N.V. George, "A local variance approach to time frequency localization," in IEEE International Advance Computing Conference (IACC), 2014, pp.991-994. | |
| Secondary Path Estimation in Active Noise Control Systems, IIT Gandhinagar | Fall 2013 |
| <ul style="list-style-type: none">Publication: S. Tyagi, V. Katre and N.V. George, "Online estimation of secondary path in active noise control systems using Generalized Levinson Durbin algorithm," in 19th International Conference on Digital Signal Processing (DSP), 2014, pp.552-555. | |

PROJECTS

- | | |
|---|--------------------|
| Human Activities and Postural Transitions' Recognition using Smartphone Data, UC San Diego | Winter 2017 |
| <ul style="list-style-type: none">Developed a classification system for human activities and postural transitions.Implemented and analyzed the performance of several classification techniques viz. K-Nearest Neighbors, Single and Multi-layer Neural Networks, Linear and Kernel SVM and, Boosting (AdaBoost and LogitBoost).Visualized the data using PCA as well as t-SNE algorithm. | |
| Image Segmentation, UC San Diego | Fall 2016 |
| <ul style="list-style-type: none">Developed generative models for image segmentation using Gaussian Mixture models with EM algorithm. | |
| Video Surveillance Bot, IIT Gandhinagar | Winter 2014 |
| <ul style="list-style-type: none">Built Intel Atom processor based bot which can be controlled from a remote client computer through the Internet.Used C in Embedded Linux environment for software to control motors, process images and transmit the video feed to remote controller client. | |
| Autonomous System for Induction Coil Calibration | Summer 2013 |
| <ul style="list-style-type: none">Developed a software for auto-calibration of VLF and LF induction coils.Used NI DAQ cards to acquire signals from the coils and processed them in Matlab to analyze the frequency response. | |
| Miniaturized System for Brain <i>in vivo</i> Imaging | Spring 2013 |
| <ul style="list-style-type: none">Implemented Temporal Laser Speckle Imaging (TLSI) Algorithm on FPGA for brain in-vivo imaging.Used python for serial communication between FPGA and computer. | |

SKILLS

C; C++; Python; TensorFlow; Spark; MATLAB/Octave; Scikit-learn; Numpy; Visual Studio; Linux.