# Nidhi Davawala

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## Education

**University of Massachusetts Amherst** Expected grad: May'21
Masters in Computer Science
*Relevant Courses: Neural Networks, Algorithms for Data Science, Systems for Data Science*

**Dhirubhai Ambani Institute of Information and Communication Technology, India** Aug'15-May'19
B.Tech in Information and Communication Technology (ICT) GPA: 8.14/10.0
*Relevant Courses: Data Structures & Algorithms, Database Management System, Software Engineering, Operating Systems*

## Internships

**Space Applications Center, Indian Space Research Organization (SAC-ISRO)** May'18-Jul'18

- Carried out supervised image classification on agricultural lands using RADARSAT-2 Synthetic Aperture Radar Data.
- Implemented Wishart Classification for classifying an image into varied crops, water bodies and populated regions
- Generated change map using hypothesis testing to identify the areas with significant changes over a period of time.
- Conducted analysis of changing trends in crop lifecycles; useful to farmers for crop-yield prediction.

## Publication

**Change Detection Of Polarimetric SAR Data For Monitoring Of Agricultural Areas** ISPRS'18
*N. Varia, **N. Davawala**, S. Chirakkal, D. Haldar, R.Ghosh, D. Putrevu* *Link to paper*

## Projects

**Mini Search Engine Implementation**

- Implemented a mini-search engine capable of handling HTTP query requests to retrieve webpages from keywords.
- Used Hadoop File Systems to store the files and corresponding URLs; Apache Spark for generating inverted index.
- Answered queries by retrieving the corresponding files stored as key-value pairs on RocksDB.

**Background modeling for foreground detection in video surveillance**

- Developed a mechanism for automatic background subtraction to identify the moving objects in a video
- Generated a basis vector of background using Principal Component Analysis and Locality Preserving Projection
- Subtracted the modelled background from the test video to detect the foreground with 97.7% accuracy.

**Breast Cancer Prediction**

- Performed a 2 class supervised classification on real valued features of a cell nucleus
- Implemented algorithms of Logistic Regression, Decision Tree Model and Random Forest for classification
- Used the best model for final prediction of the cell as either malignant or benignant

**Farm Management System**

- Developed comprehensive database using PostgreSQL to capture transactions between farmers and buyers
- Modeled system to answer queries of proximity of farmer-buyer, availability of crops and best market price

## Technical Skills

- **Languages:** C/C++, Python, PostgreSQL, MATLAB, HTML, TensorFlow
- **Certifications:** Neural Networks (NTU Singapore), AI-Search Methods for Problem Solving (IIT Madras)

## Leaderships and Achievements

- Chairperson, **Women in Engineering** (WIE) Affinity Group of IEEE Student Branch, DA-IICT (2018)
- Executive Committee Member of **IEEE Industry Applications Society** DA-IICT Student Branch Chapter (2016)
- Recipient of **Scholarship for Higher Education** (SHE) by the Dept. of Science and Technology, Govt of India (2014)