

# GAURAV AHUJA

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## EDUCATION

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### Stony Brook University, New York

Aug 2017 – Dec 2018 (Expected)

Master of Science, Computer Science

GPA 4.0/4.0

Relevant Courses: Computer Vision, Big Data Analytics, Artificial Intelligence, Machine Learning, NLP, Database

### Indian Institute of Technology (IIT) Delhi, India

July 2011 – May 2015

Bachelor of Technology, Computer Science and Engineering. Ranked 95/468,280 in the qualifying exam (JEE 2011)

## TECHNICAL SKILLS

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Java, MATLAB, C, C++, Python, Spark, Android, OpenCV, Tensorflow, Keras, SQL, Version Control (Git, Perforce)

## WORK EXPERIENCE

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### Samsung R&D Institute India, Noida

July 2015 – Aug 2017

Engineer – Biometrics and Computer Vision Team

- *Biometrics*: Developed an authentication system based on a novel biometric. Implemented the functionality to collect raw data and extract biometric template. Trained SVM and ensemble of decision trees on handcrafted features for authentication. Collected data of 520 users and achieved 4.34% FRR at 0.0017% FAR
- *BioHashing*: Developed a two factor fingerprint authentication system using bihashing
- *Private Mode*: Worked on development of framework layer of Private Mode feature in Samsung Android smartphones
- *Launcher*: Developed an Android Launcher which included the functionality to hide applications in personal mode
- *Awards*: Two time winner in center wide *MOSAIC Ideation Contest*

## INTERNSHIP

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### Samsung R&D Institute India, Noida

Summer 2014

Facial Landmark Detection

- Trained HAAR feature based cascaded classifiers for detecting eyes and mouth in face images
- Used a regression model to obtain coarse estimates of facial landmarks. Trained random forests and a regression model to iteratively refine the estimates using local information and global shape

## ACADEMIC PROJECTS

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### Crop Yield Prediction Using Big Data

Fall 2017

- Computed normalized histograms of weather characteristics at biweekly and monthly time steps using Spark
- Used random forest, linear and support vector regression to predict per year yield of Apple, Barley and Maize

### Yeast Cell Detection in Fluorescent Microscopy Images

Fall 2017

- Trained YOLO network for detecting variable number of yeast cells. Achieved average IOU score of 0.46

### Facial Expression Recognition System

Fall 2014

- Developed a real time facial expression recognition system robust to illumination variations
- Used geometric and texture (LBP, LDP) features, SVM, Naïve Bayes and kNN classifiers for expression classification

### Data Visualization and Analysis

Fall 2012

- Analyzed the state of Indian Lok Sabha by visualizing the parliamentary data. Formulated and tested hypothesis about the MPs behavior based on age, gender, education, political party and location
- Analyzed a hypothetical live social media database. Used the information about communication between nodes to establish node clusters and popularity trends of topics being discussed in the network

### Part of Speech Tagger

Spring 2015

- Developed a Hidden Markov Model (HMM) based Part of Speech tagger. Used bi-gram, tri-gram models and Viterbi algorithm to obtain most probable tag sequence

### PintOS

Spring 2014

- Implemented argument passing, system calls in user programs and buffer cache, extensible files in filesystem

### Study of Classifiers

Fall 2014

- Implemented SVM, Neural Network, Naïve Bayes, K-means, Decision trees, PCA, Linear and Logistic regression for problems like SPAM classification, digit recognition, document classification, voting prediction and face recognition

### Travel Planning Website

Spring 2014

- Developed the backend of a dynamic travel planning website. Implemented the functionality to search hotels, restaurants in a city and trains between two cities (direct and indirect)