# OMKAR KARANDE

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## EDUCATION:

**University of Southern California** (USC), Los Angeles, CA — Expected: December 2016
Master of Science in Computer Science — **GPA: 3.68 / 4.0**
Courses: Algorithms, Machine Learning, Information Retrieval, Web Technologies, A.I.

**University of Mumbai**, Mumbai, India — August 2014
Bachelor of Engineering in Computer Engineering — **GPA: 3.5 / 4.0**
Courses: Computer Networks, Computer Graphics, Microprocessors

## TECHNICAL SKILLS:

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|---|---|
| Programming Languages: | (Proficient) Java, Python; (Prior Experience) C, C# |
| Web Technologies and Frameworks: | HTML, CSS, JavaScript, AngularJS, Node.js, Bootstrap, REST |
| Mobile Development: | Android, Windows Phone |
| Databases: | MySQL, SQLite, MongoDB |
| Source Control Tools: | Git, SVN, Perforce |

## PROFESSIONAL EXPERIENCE:

**Akamai Technologies**, Cambridge, MA (Distributed Data Engineering Intern) — **May 2016 – Present**

- Developed an alerting system in Python to notify of failures in real-time. It is designed to be highly configurable with ability to define custom alerts and automatic drill down of each fired alert for further examination.
- Working on a program to detect failures on individual nodes in a distributed network.

**Tata Consultancy Services**, Mumbai, India (Software Developer Intern) — **August 2014 – October 2014**

- Worked in a team of two to build a prototype routing mechanism in C leveraging Dual-Stack and Tunneling methods to enable communication between an IPv6 server and multiple IPv6 and IPv4 clients

## ACADEMIC PROJECTS:

**Facial Expression detection using Deep Neural Networks** — **May 2016**

- Constructed a deep convolutional neural network in Python using Lasagne and Theano libraries
- Used CUDA toolkit to allow for GPU based acceleration
- Achieved an accuracy of 99% for keypoint detection and an accuracy of 80% on expression detection using the keypoints

**Egocentric Video Summarization and Indexing** — **April 2016**

- Developed a software in Java to process egocentric (first-person) videos to find points of interest
- Summarized videos to about 40% of original length by eliminating redundancy using histogram and color estimation, k-means clustering, and motion compensation
- Indexed the video frames to make searching for subsections using images possible.

**Search engine and visualization dashboard for crawled data of weapon images** — **December 2015**

- Crawled 40GB of image and HTML data of firearms using Apache Nutch and indexed it into Apache Solr
- Developed deduplication and ranking algorithms in Python to run on the crawled image data
- Developed a visualization dashboard using D3.js to look for temporal and spatial trends in the data. Developed a REST architecture using Node.js to enable communication between the Solr index and D3 visualizations

**Naïve Bayes classifier for spam and sentiment detection** — **September 2015**

- Developed a generic Naïve Bayes classifier with smoothing in Python
- Worked with a labeled dataset of 22,000 emails from the Enron corpus and 25,000 movie reviews from IMDB
- Achieved an accuracy of about 98% for spam detection and 84% for sentiment detection

**Python implementation of TCP/IP protocol stack** *(Individual Project)* — **March 2015**

- Developed an application in Python using Raw Sockets to download the contents of the given URL
- Worked on packaging and transmitting/receiving TCP packets, sending HTTP requests to web pages, validating checksums, extracting and packaging of payloads, handling retransmission, and sequencing the packets

**ISSAC** – Gesture control suite for wearable devices *(Publication: http://goo.gl/Olj5ow)* — **March 2014**

- Worked in a team of three to demonstrate the use of data from sensors on wearable devices to detect gestures
- Application considered user context and a continuous stream of sensor data to provide a rich set of gestures to interact with nearby devices