

# SUMEET AGRAWAL

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## EDUCATION

University of Southern California (CGPA: 3.5)	MS, Computer Science (Specialization in Data Science)	Expected May 2018
Vellore Institute of Technology, Vellore (CGPA: 3.8)	B. Tech, Computer Science and Engineering	May 2016

## WORK EXPERIENCE

<b>Data Science Researcher</b>	<b>Integrated Media System Research Centre, USC</b>	<b>Sept 2016 - Present</b>
<ul style="list-style-type: none"><li><b>Tweet Mining:</b> Enhanced situational awareness during disaster by visualizing and classifying disaster-related social media data.</li><li><b>Image Geolocalization:</b> Devised a framework to extract image features (SIFT, fine-tune CNN) and produced geotagged Images.</li><li>Co-author in 2 peer reviewed research papers in highly prestigious conferences and journals, <b>IEEE BigMM</b> and <b>IEEE DSAA</b>.</li></ul>		
<b>Data Scientist</b>	<b>Archie.AI, San Francisco</b>	<b>June 2017 - August 2017</b>
<ul style="list-style-type: none"><li>Delivered a real-time Anomaly detection model using K-means clustering and moving average technique for classification.</li><li>Built a Google AdWords optimizer using Recurrent Neural Networks, Principal Component Analysis and Word Embedding that predicted number of Ads impressions in a time period and classified the type of user that will most likely click the Ad.</li></ul>		
<b>Project Software Engineer</b>	<b>IIT, Indian Institute of Technology, Mumbai</b>	<b>Jan 2016 - July 2016</b>
<ul style="list-style-type: none"><li>Lead the team of project “<b>Jellow</b>” - Developed and designed a multilingual Alternative &amp; Augmentative Communication (AAC) App especially for children suffering from Cerebral Palsy (difficulty in speaking) and for a general Educational purpose.</li><li>Deployed a preference algorithm and performed server-side user data analysis using PHP, MySQL and Python2.7</li><li>“Jellow” Application was featured as a news article in two leading newspapers of India, <b>Times of India</b> and <b>Hindustan Times</b>.</li></ul>		
<b>Software Developer</b>	<b>Blazingtrail, India</b>	<b>May 2015 - July 2015</b>
<ul style="list-style-type: none"><li>Programmed an information capturing app “<b>DigiDocs</b>” that precisely stored, shared, annotated and managed documents.</li><li>Integrated OpenCV, canny edge detection, Gaussian Blur and OCR Tesseract libraries for image processing and text extraction.</li></ul>		

## TECHNICAL SKILLS

**Programming Languages:** Python2.7 (5 Years), Java (7 Years), C++ (7 Years), C, PHP, HTML5/CSS, Octave.

**Machine Learning Technologies:** Scikit – Learn, Spark, Caffe, Weka, AWS, Hadoop, HBase, TensorFlow, Keras.

**Software and Database Tools:** Flask, SQLAlchemy, Heroku, Ubuntu, Android Studio, Unity3D, Docker, MySQL, SQLite.

## PROJECT EXPERIENCE

<b>Automatic Question Generation Model (Jeopardy Game)</b>	<b>June 2017 - August 2017</b>
<ul style="list-style-type: none"><li>Developed a data acquisition app that collected multiple questions for each sentence type by replicating the “Jeopardy” Game.</li><li>Used JS and BubbleBot API for the interface, Flask and python to create the server and SQLAlchemy for database creation.</li><li>Engineered a Generative Adversarial Network that auto generated realistic yet fake questions similar to a human response.</li></ul>	
<b>Geo-spatial Multimedia Sentiment Analysis, Info Lab at USC (Sponsors – Google, NSF, Oracle)</b>	<b>Jan 2017 - June 2017</b>
<ul style="list-style-type: none"><li>Designed a framework that normalized multiple data type (image &amp; text) sentiments in spatial and temporal dimensions.</li><li>Captured visual sentiment using Convolutional neural network (CNN) and SentiBank model. Preprocessed text using tokenization technique and performed text sentiment analysis by incorporating SentiStrength, CoreNLP and NLTK models.</li></ul>	
<b>Social Urgency Map, Information Lab at USC (Sponsors – Google, NSF, Microsoft)</b>	<b>Sept 2016 - Dec 2016</b>
<ul style="list-style-type: none"><li>Created a model that prioritized media data generated during Disaster Crisis to help first responders make critical decisions.</li><li>Performed analyzes on 11 different disaster types and classified data points into relevant or not relevant with 86% accuracy.</li><li>Adapted Machine Learning techniques such as NLTK, Word2Vec, Latent Semantic Indexing and SVM for classification.</li></ul>	
<b>Fit-Bit for Brain using Muse Headband</b>	<b>February 2017</b>
<ul style="list-style-type: none"><li>Developed a Brain app that tracks and reports user concentration level using the EEG values generated by muse headband.</li><li>Integrated Azure Machine Learning studio and implemented Decision tree model to achieve 83% classification accuracy.</li></ul>	
<b>MedHap (Cal Hacks 3.0 Hackathon) – Among Top 5 teams</b>	<b>November 2016</b>
<ul style="list-style-type: none"><li>Build a medical app that instantly scanned and communicated patient’s skin abnormality image to dermatologists for analysis.</li><li>Used <b>Tanvas</b> Haptic SDK to generate dynamic skin textures and Watson’s visual recognition API for skin disease classification.</li><li>Worked on a Surface haptics technology that controlled forces acting between a fingertip and the mobile surface in real time.</li></ul>	
<b>Multilingual Voice Search (AT&amp;T Hackathon) – Runner-ups</b>	<b>October - 2016</b>
<ul style="list-style-type: none"><li>Created a smart text learning model capable of understanding multilingual voices and texts to generate database search query.</li><li>Deployed an app integrated with Nuance Mix Automated Speech Recognition API and Natural Language Understanding API.</li></ul>	

## HIGHLIGHTS

- Wrote an article on [Generative Adversarial Networks](#) on Medium.com, which got featured under Artificial Intelligence section.
- Published [3 Machine Learning video tutorials](#) showcasing various concepts and building them from scratch within few minutes.
- Published android apps on Google Play Store: Voice Reader, D’source, Seatrr Dish Discovery and Jellow Communicator app.