

# Anurag Panwar

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<b>OBJECTIVE</b>	To obtain a position that will enable me to use my strong technical expertise and computer skills		
<b>EDUCATION</b>	<b>University of South Florida, Tampa, FL</b>		
	Master of Science (M.S.) in Computer Science and Engineering		May 2016
	Advisor: Dr Sriram Chellappan		GPA: 4.0/4.0
	<b>Research areas:</b> Machine Learning, Deep Learning, Data Mining		
	<b>Indian Institute of Technology, Guwahati, Assam, India</b>		
	Bachelor of Science (B.S.) in Computer Science and Engineering		May 2012
	Advisor: Dr Ashish Anand		GPA: 3.7/4.0
	<b>Thesis:</b> Network based approach to predict the disease genes		
<b>SKILLS</b>	<b>Languages:</b> Python, C, C++, JAVA, MATLAB, R programming, Ruby, SAP ABAP, Javascript, JQuery, Shell, $\text{\LaTeX}$ <b>Frameworks:</b> Hadoop (MapReduce, Streaming), Spark, HBase, scikit-learn, numpy, scipy, Pig, Hive, Theano, Tensorflow, caffe, JQuery Mobile <b>Database:</b> Oracle 11g, MySQL, MongoDB, PostgreSQL <b>Development and Build Tools:</b> Eclipse IDE, VIM, PyCharm, Dev-C++, WEKA		
<b>RESEARCH EXPERIENCE</b>	<b>University of South Florida, Tampa, FL</b>		
	Graduate Research Assistant, Computer Science and Engineering Department		Jul 2014 – Present
	<ul style="list-style-type: none"><li>• <b>User fingerprinting using network forensics:</b> Devising a deep neural network (DNN) based algorithm to identify a user based on internet usage pattern. Some of the applications are fraud detection, restrain unwanted access to user account and strengthening the security of an organization</li><li>• <b>Event tracking using social media:</b> Created web based Real-time Heatmap visualization tool for tweet related keyword using Twitter streaming API in python. Used NoSQL database MongoDB for storing and managing data</li><li>• <b>SentiTU-Music recommendation system:</b> Devised SentiTU-Music recommendation based on Social Media Sentiment of User using Django web framework and python. Used various machine learning classification techniques (Naive Bayes, Maximum Entropy, Polarity, LinearSVC) and natural language processing for predicting the sentiment of a user. For music recommendation system, we used text analysis of song lyrics to know genre of song. This information will be fed to music recommendation system to suggest a song</li><li>• <b>Mood detection based on social media sentiments:</b> Designed and implemented Sentiment analysis based algorithms to detect the mood of a person using social media data in python and Java</li></ul>		
	<b>Pohang University of Science and Technology, Pohang, South Korea</b>		
	Research Assistant Intern, SSLab		May 2010 – Jul 2010
	<ul style="list-style-type: none"><li>• Lead the development of secure server/client installer for the Enterprise edition of Debian Lenny with Prof Chan-IK Park for secure installation of enterprise packages using Trusted Platform Module (TPM)</li></ul>		
<b>ACADEMIC PROJECTS</b>	<b>Designed deep neural network from scratch</b>		Spring 2016
	Developed feed-forward and back-propagation from scratch • Dropout • Investigated performance of sigmoid, relu and tanh as activation function • Implemented stochastic gradient descent for faster training • Applied centralization and normalization to training data		
	<b>Implemented convolutional neural networks (CNN) for MNIST dataset</b>		Spring 2016
	Implemented CNN with 2 convolutional layers and two Multi-Layer Perceptrons (MLP) layers • Used 10 and 20 receptive fields for 1st and 2nd convolutional layers • Implemented Softmax at the output layer • Max-pooling • Achieved accuracy of 99.65% on testing dataset		
	<b>Implemented A-Star Algorithm along with UI as part of AI course in JAVA</b>		Fall 2015
	<b>Pint OS: Enhancing the operating system kernel, IIT Guwahati</b>		Fall 2010
	Improved the functionality of Pint Operating System by implementing advanced constructs, in C (Process Synchronization, Priority Donation, Avoiding Deadlocks, System Calls (user and kernel modes), File System management, Virtual Memory)		

**WORK  
EXPERIENCE****Aclara Technologies**, St Louis, MO

Machine Learning Intern (Dr David Rieken), Research &amp; Development

May 2015 – Aug 2015

- Worked as a part of team to develop Machine Learning techniques to get insight of data. Research helped in creating new products like battery life prediction
- Assisted R&D team to make faster progress on Fault Detection and Localization research by developing and organizing their MATLAB library of simulation tools
- Designed web application prototype for troubleshooting Fault Detection and Localization research related problems using Java, Javascript and PHP
- Rated as the “**Best Intern**” by R&D team

**Indian Oil Corporation Limited**, Gurgaon, New Delhi, India

Big Data Engineer, Corporate Office

Aug 2012 – Jul 2014

- Helped in configuring of SAP HANA (high performance analytic appliance) which provides functionality like in-memory computing, column-oriented RDBMS, processing for transactional and analytic workloads on the same system with OLTP and OLAP
- Developed predictive model based on Random Forest using SAP HANA to predict crude oil price change
- Designed two mobile applications: mPower for sales officers and employees of IndianOil and Xsparsh for sales customers to access the SAP ERP of IndianOil. Assisted sales officers in checking various sales and finance transactions on the go
- Developed GPS based android mobile application- Xsnehash for Indian Oil consumers to track the nearest gas station and know gas price in real-time
- Mobile development team awarded “**Innovation Award**” for creative design of software applications

**Mogreet, Inc.**, Los Angeles, CA

Data Science Intern

May 2011 – Jul 2011

- Analyzed data to see the relative changes in different subsystems (like Carries, Handsets et al over time) using R programming and neural network approach. Assisted marketing team in targeting campaigns to particular set of audience which improved the involvement ratio
- Implemented QR (Quick response) encoder, which generates QR code for the URL, text, vcard and mobile message using Ruby and Python. Helped Mogreet in marketing various client campaigns using QR code
- Designed and implemented responsive mobile UI for Mogreet using JQuery Mobile

**AWARDS  
& HONORS**Awarded **Computer Science Academic Achievement Award** for achieving **4.0/4.0 GPA** at Missouri University of Science and TechnologyRecipient of **Central Sector Scholarship** initiated by Ministry of Human Resources and Development (MHRD) awarded to 10 students of IIT Guwahati on the basis of performance in IIT-JEE (2008)Secured a position among **top 0.1% from a total of 3,00,000 entrants** in Joint Entrance Examination (JEE) for IITs in 2008Recipient of India's most prestigious **National Talent Search Examination (NTSE) Scholarship 2006** (Percentile 99.87%)**LEADERSHIP  
& AFFILIATIONS**Recipient of **CS Ambassador Award at Missouri S&T**. Ambassador Award is awarded annually to one honoree in recognition for outstanding contributions to the Computer Science department**Department Representative** of Computer Science in **Council of Graduate Student (CGS)**, Missouri University of Science and Technology**Committee member** of **International Student Club (ISC)** of Missouri S & T**Committee member** of **Diversity Leadership Program (DLC)** at Missouri S & T**RESEARCH  
PUBLICATIONS**

**Anurag Panwar**, Mariam Al-Lami, Pratoool Bharti, Sriram Chellappan, Joel Burken, “Determining the Effectiveness of Soil Treatment on Plant Stress using Smart-phone Cameras”, to appear in *Proceeding of IEEE International Conference on Selected Topics in Mobile and Wireless Networking (MoWNet)*, Cairo, Egypt, April 2016