Pavan Reddy Bommana

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EDUCATION

University of Massachusetts, Amherst *2019 - Present*

MS in **Computer Science**.
- *Relevant Courses:* Machine Learning, Algorithms for Data Science, Systems for Data Science

Indian Institute of Technology Kharagpur *2013 - 2017*

Bachelor of Technology (Honours) in **Computer Science and Engineering**.
- *Relevant Courses:* Machine Learning, Deep Learning, Artificial Intelligence, Information Retrieval, Computer Vision, Digital Image Processing and Database Management Systems.

WORK EXPERIENCE

Member of Technical Staff *Oct 2017 - Jun 2019*

Acceletrade Technologies Pvt. Ltd. - Bangalore

- Built scalable data handling framework for market data to facilitate efficient back-testing of quantitative strategies.
- Analysed data for successful project design decision and for successful first confirmation tick in NSE F&O market.
- Conceptualized and implemented an automated alerting mechanism, that raises alerts based on trading systems' and strategy performances, using predictive analysis and anomaly detection techniques.
- Contributed to in-house data analytics tools that facilitate interactive visualization of market tick data.
- Developed Trader Workstation (TWS), a proprietary Flask application to facilitate hassle-free trading.

Software Developer Intern *May 2016 - Jul 2016*

Hewlett Packard Enterprise - Bangalore

- Developed an API module in Java to automate the process of creation, configuration and deletion of a Distributed Virtual Switch on an HPE OpenSwitch server, taking all the possible edge cases into consideration.
- Implemented SSH and REST based API modules to capture and store the system statistics of the OpenSwitch and HPE Generalswitch which were further used for performance analysis of the switches.

TECHNICAL SKILLS

- **Languages:** Python, C++, C, Java, SQL, R
- **Libraries:** PyTorch, Pandas, TensorFlow, OpenCV, NumPy, Scikit-learn, pytesseract, SciPy
- **Technologies:** PostgreSQL, InfluxDB, Hadoop, Vertica, Elastic Search, GitHub, Phabricator

PROJECTS

Gait Based Identity Verification *Jul 2016 - May 2017*

Advisor: Prof. Shamik Sural - *Bachelor Thesis*

- Implemented a novel model to establish the identity of a person, based on the walking style, using techniques such as background subtraction, feature extraction, CNN and depth analysis.
- Collected and pre-processed the data of many subjects and applied the CNN model to identify a person among different subjects. Compared the results by applying the same model to the CASIA-B dataset.
- Obtained top-1 accuracy of 72% and top-5 accuracy of 82.7% on the curated dataset.

Text Summarization *Jul 2016 - Dec 2016*

Advisor: Prof. Pabitra Mitra

- Developed unsupervised text summarization system which returns gist of a large text corpus of product reviews.
- Designed an LSTM Encoder taking in the sentence embeddings generated by extending the Word2vec approach.
- Generated unsupervised abstractive summary for the text corpora using the encoder-decoder model.

Serendipitous Search of Research Articles *Jan 2016 - Apr 2016*

Advisor: Prof. Pawan Goyal

- Conceptualized and implemented a search engine that gives serendipitous suggestions of research articles to the reader based on the search query.
- Dealt with a large dataset of 40GB comprising various research articles' metadata. Used graph-based information retrieval approach and customized ranking formula to retrieve serendipitous results.
- Implemented a relevance feedback mechanism that reinforces the graph search algorithm to give better results.

Grapher *Feb 2016 - Apr 2016*

Opensoft Competition 2016

- Developed a standalone software that detects all the graphs embedded in a PDF document and converts the data points into a tabular format using open-source tools, image processing techniques and machine learning algorithms.
- Formulated and implemented algorithms using several open-source tools such as OpenCV, pytesseract, scikit-learn and techniques such as edge detection, K-means to successfully extract the numerical values of the points.