Raviteja Uppalapati

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Expertise

- **Data Fusion**: Integration of conflicting data from structured and unstructured data sources; Probabilistic and deterministic entity resolution techniques.
- **Text and Unstructured Data**: Deep working knowledge of building data pipelines, feature extraction and machine learning using unstructured text/string data.
- **Rapid Prototyping**: Developing innovative data products using machine learning from conception up through design for prototyping and productionalizing using Agile.

Education

- **Indian Institute of Technology (IIT)** — Kharagpur, India
  Master of Technology in Instrumentation Engineering — Jul 2007 - May 2012
  Bachelor of Technology in Electrical Engineering
  Cumulative GPA: 7.85/10; Department Rank: 5 out of 22

Experience

- **American Express** — New York, NY
  Data Science Manager — Nov 2015 - Present
  - **Data Fusion**: Using Bayesian inference, built a merchant database by integrating conflicting information from multiple structured data sources like Yelp, TripAdvisor, Foursquare, D&B etc.
  - **Industry Classification**: Built a hierarchical classification model using an ensemble of gradient boosting and pseudo relevance feedback to classify merchants into a 30,000 industry categories. Created features using word embeddings on text data scraped from web search results.
  - **Location Intelligence**: Developed a multi-language address parsing tool using deep learning that resulted in an improvement of 12% in geocoding accuracy.
  - **Offer Recommendations**: Developed a recommender system using Restricted Boltzmann Machines (RBMs) to improve relevance of merchant offers that resulted in a lift in precision of 15% over an existing technique.
- **American Express India** — India
  Data Scientist — Jul 2012 - Oct 2015
  - **Entity Resolution**: Developed an entity resolution algorithm to match business records using Support Vector classifier on features extracted using multiple string comparison functions.
  - **Card Member Marketing**: Identified card member lookalikes using k-Nearest Neighbor algorithm to create targeted merchant marketing campaigns that improved offer response rate by 65%.
  - **Spend Trigger Model**: Created a spend trigger model that predicts the likelihood of spend in a given industry using transaction patterns identified using association rule learning on past transaction data.
- **Flagstone Reinsurance** — India
  Intern — Summer 2011
  - **Classification**: Developed a sentiment analysis model to classify market research reports and news articles using random forests.
  - **Price Forecasting**: Improved an existing asset price forecasting model using text features extracted from market research reports.

Skills

- **Languages**: Python, C/C++, Scala, SQL/Hive, Matlab, HTML
- **Technologies**: Tensorflow, Hadoop, Spark, OpenMP, CUDA

Projects

- **Masters' Thesis**: Developed a real-time vein imaging system that detects and segments veins in video feed captured using infrared light. Demonstrated its application for use in intravenous injections and built a pattern recognition tool for biometric identification using vein patterns.
- **Control Systems Lab, IIT Kharagpur**: Designed a multi-sensor network that classifies and measures various physical activities. Developed a controller that fuses data from the sensor network and controls the rate of an artificial heart.

Relevant Course Work

- **IIT Kharagpur**: Artificial Intelligence, Computer Software, Computer Architecture and Operating Systems, Programming and Data Structure, Digital Image Processing, Digital Speech Processing, Advanced Numerical Analysis, Transform Calculus, Probability and Stochastic Processes
- **Coursera**: Algorithms Specialization, Deep Learning Specialization, Functional Programming Principles in Scala
- **Other**: MIT-OCW: Statistical Mechanics, Youtube: Introduction to Machine Learning (CMU), Computational Algebraic Topology (American University)