Achal Shah

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Areas of interest: Scalable Distributed System, Machine Learning

Education

University of Pennsylvania	**Phiadelphia**

Master of Science and Engineering, Computer and Information Science — 2011–2013

Relevant Coursework: Internet and Web Systems, Database and Information Systems, Mathematical Statistics, Machine Learning

Institute of Technology, Nirma University	**Ahmedabad**

Bachelor of Technology, Computer Engineering — 2007–2011

Experience

Amazon.com	**Seattle, WA**
Software Development Engineer	*2013–Current*

- Amazon Fulfillment Technologies - Outbound Flow: The team owned services to predict incoming work that warehouses would receive, and the throughput that warehouse associates would achieve, to help optimize planning and operational decisions. I worked on the following:
  - Implemented caching strategies to cut down forecast creation times by 70%.
  - Worked on features to bring the error of both services down under 15%.
  - Contributed to a community-owned monitoring service to automate alarm creation, and drove its adoption across the org.
- Amazon Fulfillment Technologies - Sortation Team: The team owned software to direct warehouse associates to sort items into individual shipments with minimal human effort. I helped scale the services to serve associates in new regions, and wrote new tools to interact with mechanical conveyance systems.

Raytheon BBN Technologies	**Cambridge, MA**
Language Understanding Graduate Intern	*May 2012–August 2012*

Worked on the FUSE project, which involved predicting scientific trends based on bibliometric data.

- Implemented feature extraction models for the task of citation prediction. Also implemented cluster quality metrics such as cosine similarity, coherence values, distribution of subjects.
- Prototyped modules to combine semantically related clusters across periods of time.

University of Pennsylvania	**Philadelphia**
Teaching Assistant for Computational Linguistics under Prof. Ani Nenkova	*Sept 2012–Dec 2012*

- Conducted remedial sessions, designed and graded assignment projects.

Academic Papers and Projects

Personality, Gender, and Age in the Language of Social Media	**PLOS ONE, September 2013**

HA Schwartz et, al., DOI: 10.1371/journal.pone.0073791

Wrote the prototype to use LDA on a large collection of tweets to cluster words into topic-based word lists. The topics were then correlated with user personality traits.

Distributed Search Engine *CIS 555: Internet and Web Systems*	**April 2013**

Built a scalable search engine from scratch. Individual components involved a Mercator-style crawler that started with a list of seed URLs, a component to create an inverted index from the crawled pages, a hadoop implementation to compute the page rank of pages and a servlet-based webserver to serve the results of web queries.

Predicting Amazon Ratings *CIS 520: Machine Learning*	**August 2011**

Implemented and compared different machine learning algorithms along with some feature selection methods on a dataset of Amazon product reviews and their corresponding ratings to predict the ratings for unseen reviews.

Automatic Text Summarization *CIS 530: Computation Linguistics*	**November 2011**

Built a system to use Named Entity Recognition, co?reference resolution and other lexical features to generate summaries from a collection of documents.

Independent Study: Dependency Eigenwords *with Prof. Lyle Ungar*	**September 2012**

Use dependency parse contexts to create eigenwords.

Personal Participation: Servo	**December 2014**

Contributed patches to the Servo browser engine to implement missing features in the DOM model.

Skills

Fluent in: Java, Python	**Familiar with**: C/C++, Rust, Javascript, Scala, Haskell
Frameworks & Toolkits: Spring, Matlab, Mallet, Stanford NLP	**Operating Systems**: Linux/Unix, OS X, Windows
Version Control Systems: Git	**Databases and Data stores**: Oracle, MySQL, BDB
Web Technologies: Apache Tomcat, Jquery	