Ravi Choudhary

MACHINE LEARNING ENTHUSIAST · SOFTWARE DEVELOPER · KAGGLE COMPETITOR

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Education

University of Massachusetts – Amherst *Amherst, MA*

M.S. IN COMPUTER ENGINEERING, GRADUATION DATE: 2017, GPA= 3.5 *Sept. 2015 – May 2017*

- **Coursework**: Machine Learning, Inferential Statistics, Probability, Natural Language Processing, Advanced Algorithms, Deep Learning, Distributed Operating Systems.

Technical Skills

Languages: **Fluency:** C++, Python **Proficiency:** Java **Familiarity:** R, HTML, CSS, JavaScript, SQL, NoSQL
Concepts : MapReduce, Multithreading, Object Oriented Programming, Design Patterns
Framework: D3js, ArcGIS, Hadoop, Spark, Django, Flask, Tensorflow MongoDB, Redis, EC2, Docker.

Experience

Machine Learning Co-op, Philips Research/MIT Urban Planning Lab, Cambridge, MA *May 2016 – Dec 2016*

- Developed the conceptual, key-based, logical, physical, and semantic data models.
- Extracted significant sentimental behavior using Vader sentiment API from social media datasets (Instagram) to observe the audience sentiment about an installed lighting products.
- Curated, merged and preprocessed very complex social media dataset collection through RESTful APIs and identified objects through computer vision techniques.
- Used Latent Dirichlet Allocation for extracting features from the text and build a machine learning model to predict lighting related documents by using Random Forests, Gradient Boosting and Naïve Bayes algorithm.

Sr. Software Engineer, Honeywell Inc., Bangalore/Phoenix (C++, Java, Algorithms) *Sept 2010 - Aug. 2015*

- Designed and implemented a distributed, fault-tolerant functionality of a large multi-threaded embedded system using object-oriented concepts like abstraction and inheritance.
- Developed the Sync feature which allows system to sync his data with other systems.
- Implemented inter-communication between two or more FMS using Finite-State-Machine/Event-Driven model.
- Delivered software solutions consistently with the product roadmap and released plan milestone.
- Performed unit testing for various functionalities, static source code analysis and performance benchmarking and written test case scripts in Python ensuring that products interface correctly.
- Strong organizational and management skills with excellent written and verbal communications.
- Exposure: Rest APIs, multi-threaded programming, object oriented design and architectures.

Projects

Segmentation from Natural Language Expressions (Python, Deep Learning) *March 2017 – May 2017*

- Addressed the challenging problem of generating a pixelwise segmentation output for the image region described by a natural language referential expression on the 20,000 images in the ReferIt dataset.
- Implemented a natural language expression encoder based on a recurrent LSTM network to encode the referential expression into a vector representation and a fully convolutional neural network to extract local image descriptors.

Home Depot Product Search Relevance (Python, ML) *Jan 2016 - May 2016*

- Designed a machine learning program in python that accurately predicts the relevance score based on the search terms and product information.
- Applied word2vec and TF-IDF to convert the textual representation into sparse features & SVD and PCA on term-document matrix for feature reduction.
- Document's preprocessing: Tokenization, stemming, query expansion using household appliance databases.

Bazaar: Peer to Peer Trading System *Jan 2016 - May 2016*

- Implemented a Bully Algorithm for leader election and Lamport Clock in trading process for event ordering in Java.
- Implemented cache consistency between traders using push consistency model and heart beat protocol.

Netflix: Prediction of Movie ratings for given user and movies (Python, ML) *Sept 2015 – Dec 2015*

- Used Netflix data set for prediction of ratings, given the user and the movie.
- Experimented various algorithms like Nonnegative Matrix Factorization, KNN, Logistic Regression, and Naive Bayes resulting in better recommendation.