

Ravi Agrawal

MACHINE LEARNING ENTHUSIAST · KAGGLE COMPETITOR

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Education

University of Massachusetts – Amherst

Amherst, MA

M.S. IN COMPUTER SCIENCE, GRADUATION DATE: 2019, GPA= 3.8 (Expected)

Sept. 2017 – May 2019

- **Coursework:** Machine Learning, Advanced Algorithms, Deep Learning, Inferential Statistics, Probability, Methods of Applied Statistics.

University of Massachusetts – Amherst

Amherst, MA

M.S. – PhD IN INDUSTRIAL ENGINEERING, GRADUATION DATE: 2019, GPA= 3.7

Sept. 2015 – May 2019

Technical Skills

Languages: **Fluency:** Python **Familiarity:** Java, R, MATLAB, HTML, CSS, JavaScript, SQL, NoSQL
Domains : Machine Learning, Deep Learning, Computer Vision, Statistical Inference
Framework: TensorFlow, PyTorch, Pandas, Numpy, MongoDB, EC2, Docker, Hadoop, Spark.

Experience

UNIVERSITY OF MASSACHUSETTS AMHERST–Research Assistant

Jan'16 – Present

- Managed participant recruitment such as determining inclusion, exclusion criteria & writing screeners.
- Design & conduct user studies to collect eye movement, vehicle data for research studies.
- Analyzed & synthesized qualitative & quantitative data to distill meaningful findings.
- Made concrete, data-driven recommendations for improved user experience based on the findings.

LEMKEN, INDIA - Data Analyst Intern

Jan'15 – April'15

- Developed machine learning based predictive modelling to anticipate pricing for the product.
- Analyzed customer experiences to provide better understanding of customer services to increase demand value.

SAIL, INDIA - Data Analyst Intern

May'14 – Aug'14

- Performed complex statistical analyses and data visualization (SQL, python, Tableau Software).
- Implemented algorithms for anomaly detection framework for sensor data of a large-scale steel plant.

Projects (📷 imraviagrawal)

Segmentation from Natural Language Expressions (Python, word2vec, Tensorflow)

March'17 – May'17

- 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 LSTM based natural language expression encoder and a convolutional neural network to extract local image descriptors to achieve the 47% IoU score.

Transition-based Dependency Parser, POS tagger and Document classifier for ANLP

March'17 – May'17

- Build a state-of-the-art transition-based dependency parser using Bi-LSTM in PyTorch - Neural network components include action chooser, word-embeddings initializer and word-embeddings combiner.
- Implemented Conditional Random Field models from scratch for sequence labeling (POS tagging) in Python.
- Implemented Naive-Bayes and Logistic Regression from scratch in Python for classifying reddit comments.

Home Depot Product Search Relevance (Python, Gensim, Sklearn, Pandas)

Jan'16 – May'16

- Designed a machine learning model using state-of-the-art word2vec to accurately predicts the relevance score based on the search terms and product information.
- Applied TF-IDF to construct term-document matrix and SVD and PCA for feature reduction.
- Document's preprocessing: Tokenization, stemming, query expansion using household appliance databases.

Netflix: Prediction of Movie ratings for given user and movies (Python, ML)

Sept'15 – Dec'15

- 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.

Publications (1 of 6)

- Agrawal, R., Wright T. J., Samuel, S., Zilberstein, S., & Fisher., D. L. (2017). The Effects of a change in Environment on the Minimum Time to Situation Awareness in Transfer of Control Scenarios (No. 17-02295)