

# Dany Haddad

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## EDUCATION

### University of Texas at Austin

*Master of Science, Electrical Engineering: Machine Learning, GPA: 3.8*

**Courses:** Data Mining, Unsupervised Learning and Greedy Algorithms, Time Series Analysis,  
Large-Scale Optimization, Genomic Data-Science and Bioinformatics

May 2019

## WORK AND RESEARCH EXPERIENCE

### Cognitive Scale

*Machine Learning Engineer*

Austin, TX

January 2018 — Present

- Developing an entry for the Quora Sincere Questions competition.
- Exploring bias in the context of entity linking and coreference resolution.
- Developed an entity linking model using deep learning, matching state of the art performance.
- Developed a framework for explaining predictions of complex classification models.
- Built a recommendation engine which incorporates user feedback as well as discrimination and privacy concerns.
- Specified and validated an interpretable anomaly detection system in the context of noisy labels and severe class imbalance.
- Built a streaming data pipeline for training machine learning models using content from Wikipedia.
- Determined trends and seasonalities in clickstream data to provide recommendations for SEO.

### University of Texas

*Graduate Research Assistant — Intelligent Data Exploration and Analysis Lab*

Austin, TX

August 2017 — Present

- Thesis in leveraging transfer learning and weak supervision for document retrieval.
- Exploring methods for cross lingual document retrieval using only monolingual corpora.
- Extended techniques for unbiased recommendation and fair ranking algorithms.
- Investigated techniques for de-biasing click-stream data for recommendation engines.
- Improved state of the art defense mechanisms against adversarial examples for neural network classifiers.
- Improved the robustness of a deep network based commonsense-reasoning model using adversarial training.
- Applied robust statistics techniques to achieve performance guarantees for time series forecasting in the context of arbitrary noise.

### Originate

*Software Engineer, Technical Lead*

Los Angeles, CA

March 2016 — June 2017

- Transitioned the data model of a 20 kloc codebase from a schema-less Firebase data-store to a PostgreSQL database utilizing a GraphQL API.
- Developed a scalable and reliable data aggregation backend for a commercial real estate search tool.

## SKILLS

- Model selection and validation for predictive and prescriptive applications.
- Data exploration, feature extraction and selection.
- Proficient in Python, Clojure, and Javascript.
- Working knowledge of Apache Spark.
- Experience with OCaml.
- Strong theoretical understanding of trade-offs of SVM, RF, GLMs, non-parametric methods.
- Deep network training and architecture selection methodology.
- Proficient in pytorch, numpy and pandas.
- Proficient SQL and No-SQL database user.
- Experience writing CUDA GPU code.

## INDEPENDENT PROJECTS

- Developing a tool for coordinating the development of ML models and their corresponding datasets to ensure the reproducibility of results: `rabbit-ml`
- Developed a symbolic electronic circuit solver for teaching introductory electrical engineering.
- Built a melody extraction tool for transcribing polyphonic music.
- Contributor to `StumpWM`, written in Common Lisp.
- Contributor to `dumpster-dive`, a tool for parsing Wikipedia markup and dumping it to a local datastore.
- Contributor to `Tertestrial`, a software testing framework.
- Contributor to `core.matrix.complex`, a Clojure library for working with complex valued matrices.
- Contributor to multiple open source Emacs Lisp tools.

## AWARDS

- Received the Charles W. and Margaret A. Tolbert Endowed Scholarships and Fellowships in Electrical and Computer Engineering.
- Received the Nicholas and Maria Weber Electrical Power Endowed Scholarship, 2014
- Named an Engineering Scholar, Cockrell School of Engineering, 2013
- Received the C.W. Cook Endowed Presidential Scholarship, 2013
- Received the Gulf Coast Power Association Program in Electric Power Scholarship, 2012