Dany Haddad

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EDUCATION

University of Texas at Austin
Master of Science, Electrical Engineering: Machine Learning, GPA: 3.9
Courses: Deep Learning, NLP, Data Mining, Unsupervised Learning and Greedy Algorithms
Time Series Analysis, Large-Scale Optimization May 2019

WORK AND RESEARCH EXPERIENCE

Cognitive Scale Austin, TX
Machine Learning Engineer January 2018 — Present

- Developed a word-sense disambiguation model using deep learning.
- Developed a framework for explaining predictions of complex classification models.
- Implemented approximate (adaptive) soft-max techniques for deep neural NLP models.
- Built a recommendation engine which incorporates user feedback as well as discrimination and privacy concerns.
- Specified and validated a multi-label classifier for an application with class imbalance and noisy labels.
- Built a pipeline for training machine learning models using text from Wikipedia.
- Determined trends and seasonalities in clickstream data to provide recommendations for SEO.

University of Texas Austin, TX
Graduate Research Assistant — Intelligent Data Exploration and Analysis Lab August 2017 — Present

- Thesis in transfer learning for recommendation engines using automatically generated data.
- Current research in 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 neural network based commonsense-reasoning model using adversarial training.
- Implemented GPU based multi-object tracking for self-driving cars.
- Applied robust statistics techniques to achieve performance guarantees for time series forecasting in the context of arbitrary noise.

Originate Los Angeles, CA
Software Engineer, Technical Lead 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

- Proficient in model selection and validation methodology.
- Proficient in data exploration and feature extraction and selection techniques.
- Experience building optimizers for: logistic regression, SVM, neural networks and robust regression.
- Working knowledge of Apache Spark.
- Ability to architect scalable and reusable implementations of ML models.
- Proficient in Python, Clojure, and Javascript.
- Proficient in `pytorch`, `fastai`, `numpy` and `pandas`.
- Proficient SQL and No-SQL database user.
- Working knowledge of XGBoost.
- Experience writing CUDA GPU code.

INDEPENDENT PROJECTS

- Developing a tool for coordinating the development of ML models and their corresponding datasets to ensure the reproducability of results: `rabbit-ml`
- Core contributor to a library for performing common actions with `numpy`, `pandas`, `tensorflow` or `pytorch` objects: `black-x6`
- Developed a symbollic electronic circuit solver for teaching introductory electrical engineering.
- Built a melody extraction tool for transcribing polyphonic music.
- 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 `StumpWM`, written in Common Lisp.
- 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