Alex Dong

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Education

New York University Sep 2019 – May 2021
M.S. Data Science, GPA: 3.92 New York, NY

- **Selected Coursework**: Machine Learning, Computer Vision, Natural Language Understanding, Recommender Systems
- Teaching Assistant for DSGA-1014, a graduate level linear algebra course for data science students.

Washington University in St. Louis Aug 2011 – May 2015
B.A. Mathematics, GPA 3.92 St Louis, MO

- **Honors Program in Statistics**
- **Honors Thesis:** A Comparison of Lasso and Dantzig Selector in Linear Regression Models

Professional Experience

Nebula Jun 2021 – Present
Data Scientist New York, NY

- Developed and maintained a core matching model, a natural language processing model that provides a match score between a job description and a resume, resulting in our firm's recruiters to quickly search for potential candidates.
- Designed and created a RecSys-style validation which showed that out of the top 50 candidates recommended by our matching model, 40% of those candidates were interviewed for similar jobs. Created a labeled dataset using the graph of candidate $\leftrightarrow$ job relationships to generate enough data for this.
- Performed ETL operations on job description and resume datasets using Google BigQuery, MongoDB, SQL, and pandas.
- Mentored a junior data scientist and managed a summer intern project.

MIT Lincoln Laboratory Aug 2015 – Mar 2019
Assistant Technical Staff Lexington, MA

- Researched topics in aircraft survivability, such as: passive radars, communication within radar networks, flight path optimization, and capability of threat aircraft. Regularly presented results to U.S. Air Force research sponsors.
- Designed and developed a library in Python to parse text-based intelligence reports, leading to an automated workflow for reconstructing and analyzing radar connectivity networks.
- Synthesized inputs from multiple aircraft and missile simulation tools in C++ and Simulink in order to optimize an aircraft's flight path given various war scenarios, which enabled our group to rapidly analyze emerging threats.
- Contributed to and maintained a library of physics-based models in C++ and MATLAB that simulate radar detections of aircrafts.

Project Work

Style Transfer for Professional Photo Edits *Independent Project* Summer 2020 - Spring 2021

- Collected a dataset of professional photographic edits that were delivered to customers.
- Trained a neural network (HDRnet) that attempted to learn the photographic edits. The neural network achieved a low loss, but the edits are still not up to professional standards.

Data for Justice *Master's Capstone Project* Fall 2020

- Worked with NYU Marron Institute and Fort Bend County, Texas District Attorney's Office to identify and quantify prosecutorial bias in the criminal justice system.
- Conducted an exploratory analysis which identified recordkeeping issues, leading to changed data collection processes.
- Found that large amounts of bias exist at limited decision-making points, which lead to investigations on why those sources of bias exist.

Learning to Rank Hotels *Class Project* Fall 2020

- Worked with RocketMiles, a hotel booking website, to benchmark deep learning methods for search engine/information retrieval ranking on an extremely sparse dataset.
- Implemented MultVAE and word2vec methods in pytorch, and achieved similar performance (on NDCG) to the LambdaMART production model with MultVAE.

Technical Skills

Other Skills	Mathematics, Statistics, Data Manipulation, Technical Communication,
Languages	Python (pytorch, gensim, nltk, pandas, sklearn), SQL, git, GCP, Bash, Spark, C++, MATLAB
Hobbies	B-boying (9 years), biking, cooking, clearing movie/book/video game backlogs