Jess Bunnag

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Education

New York University, Center for Data Science — **New York, NY**
Master of Science in Data Science — Expected May 2023

Columbia University — **New York, NY**
Bachelor of Science in Computer Science — Sep 2015 – May 2019

Work Experience

Verkada — **San Mateo, CA**
Data Engineer Intern, Data Platform — June – August 2022

- Published product usage analytics dashboard using Airflow, Athena, and Metabase for the admin page, which allows users to monitor actions logged by any of the company's security system products. Helps product teams make data-driven decisions.
- Built dashboard for sales team to monitor time from shipping to camera installation, improving post-sales customer service.
- Designed experiment ID logging to enable A/B experimentation and metrics calculation when launching new model features.

Agoda — **Bangkok, Thailand**
Software Engineer, Metasearch Ads Bidding — July 2019 – August 2021

- Enhanced and maintained the automated bidding framework for 300M+ bidding entities, which uses XGBoost and CatBoost to predict optimal cost per click for ads listings on metasearch engines, including Tripadvisor, Trivago and Google HPA.
- Optimized the bidding framework by linking/reading/writing to database files on Hadoop, speeding up the pipeline by 20x.
- Designed and incorporated 2 new features into a margin prediction model—increased annual revenue by approximately $1M.

Appian — **Reston, VA**
Software Engineer Intern — June – August 2018

- Enhanced the Connected System Template SDK, which allows users to integrate third-party services into applications built on Appian's platform, by implementing a visual interface to integrate with Google Cloud Vision.
- Improved SDK's implementation of OAuth 2.0 by persisting access tokens for unsaved Templates that require authorization.

Sun Trading LLC. — **New York, NY**
Software Development Intern — June – August 2017

- Developed a simulation algorithm in C++ that analyzes order books in real time and identifies market trends to improve trading strategies. Results were used with treasury order books, to aid in filtering market-making data.

Technical Projects

Latent Factor Movie Recommendation System — **New York University**

- Built a movie recommendation system that recommends top 100 items to users. Used latent factor model with Spark's ALS API to learn user/item representations via matrix factorization. Trained on MovieLens datasets (27M ratings on 58K movies).
- Evaluated accuracy of latent factor model using the NDCG metric (0.014, compared to baseline of 4e-6).
- Used UMAP to visualize movie clusters and understand model errors (overrepresentation of outliers, genre overlap).

Comparing Image Similarity Ratings of ResNet50 and Humans — **New York University**

- Compared DL models to humans by analyzing similarity ratings that ResNet50 and humans gave to toy/real animal images.
- Fine-tuned ResNet50 using PyTorch by freezing the last layer of the network and reinitializing a new fully-connected Linear layer with 90 output features (the number of animal classes in our dataset). Achieved 85.24% accuracy after 10 epochs.

Movie Ratings Multi-output Linear Regression Model — **New York University**

- Used multi-output linear regression to predict personality from movie preferences, given a dataset of 1097 personality survey answers and movie ratings. Explored effects of tuning regularization hyperparameters in ridge and lasso regression models.

Skills / Academics

Languages: Python, PostgreSQL, Java, Scala, HTML, CSS, Javascript, Flask | **Tools:** Spark, Hadoop, Apache Airflow

Courses: Machine Learning, Big Data, Deep Learning, Computational Linear Algebra, Probability and Statistics, Natural Language Processing, Artificial Intelligence, Advanced Web Design Studio, Data Structures and Algorithms

Teaching: TA for Intro to CS and Programming in Java (Columbia), TA for Fundamental Algorithms (NYU)