William Huang

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Education

New York University, Courant Institute; New York, NY — Anticipated: May 2021

M.S., Scientific Computing

Cumulative GPA: 3.67

Relevant Coursework: Deep Learning, Natural Language Understanding, Machine Learning, Fundamental Algorithms, Numerical Methods I, Big Data Science

Cornell University, College of Engineering; Ithaca, NY — May 2016

B.S. with Honors, Operations Research Engineering, *Dyson Business Minor for Engineers*

Major GPA: 3.76 | Cumulative GPA: 3.60 | Cum Laude

Relevant Coursework: Machine Learning, Statistical Data Mining, Optimization I & II, Stochastic Processes, Object Oriented Programming, Engineering Probability and Statistics I & II

Projects

Embeddings for Continual Learning; New York, NY — Feb 2020 — Present

- Researched the performance of large pre-trained Transformer networks on continual learning tasks
- Designed an experiment to test meta-learning algorithms to learn BERT-based contextual embeddings that are robust against catastrophic forgetting
- Implemented a program using PyTorch and Huggingface's Transformers libraries to train BERT-based models on a continual learning curriculum of question-answering tasks and perform our meta-learning experiment

Task Sensitivity to Problem Formalization; New York, NY — Feb 2020 — Present

- Researched the effect of task formalization on model performance for the Winograd Schema Challenge (WSC)
- Coordinated several hundred training runs on New York University's high performance computer cluster to train models on seven WSC-like tasks for an ablation analysis
- Analyzed results using Pandas and Matplotlib to perform an ablation analysis between two popular WSC formalization and attribute the 16.3% difference in accuracy

Fake Review Detection with Contextual Embeddings; New York, NY — Feb 2020 — Present

- Tested various contextual embedding models on real-life fake review detection to gauge the performance of ALBERT, BERT, and RoBERTa
- Examined review data to understand feature distributions and mine for user statistics to further discriminate reviews

Unsupervised Document Clustering; New York, NY — Feb 2020 — Mar 2020

- Built a textual data processing pipeline in Java with the StanfordNLP package to read, tokenize, and vectorize documents with term frequency-inverse document frequency (TF-IDF) in preparation for unsupervised clustering
- Implemented K-Means clustering to group similar documents and performed PCA decomposition for 2D cluster visualization

Professional Experience

American International Group, Inc (AIG); New York, NY

Enterprise Risk Management Analyst II — Aug 2016 — Jun 2019

- Analyzed and simulated AIG's loss distribution of 50M scenarios to estimate the amount of capital required at each operating unit to buffer against financial downturns as part of the capital allocation process
- Led a team of international analysts in the migration of the capital allocation process to Python as part of a cross-functional collaboration with IT to integrate capital modeling with our newly designed SQL database
- Managed quarterly capital estimation and reporting by collaborating with upstream teams and internal analysts to ensure timely input deliveries, coordinate processing responsibilities, and produce presentations for key stakeholders

Skills & Interests

Technical Skills	Python • Java • SQL • MATLAB • R • Microsoft Office • LaTeX
Packages	PyTorch • Pandas • Numpy • Huggingface • Matplotlib • spaCy • StanfordNLP
Interests	Board Games • Chess • Skiing • Football • Basketball • Cooking