ALEX TSUN

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EXPERIENCE

Course Assistant

Stanford University School of Engineering

Apr 2019 – Present Stanford, CA

- CS 109: "Probability for Computer Scientists".
- Developed new materials for section, including problems, review sheets, and quizzes.
- Led discussion sections, graded homework and exams, and held regular office hours.

Machine Learning and Relevance Engineer Intern

LinkedIn

Jun 2019 – Sep 2019 Sunnyvale, CA

- Jobs Personalization Team under Careers AI.
- Worked on incorporating long-text semantic information from members and jobs into job recommendation pipeline.
- Experimented with fine-tuning BERT model using Tensorflow, but was computationally intractable due to the size of BERT and the dataset.
- Wrote pipeline to compute text embeddings offline with pre-trained BERT to use as features, resulting in a 1.3% AUROC lift on prediction of apply.
- Moved to CNN model with orders of magnitude fewer parameters than BERT, allowing for fine-tuning. Ability to fine-tune gave an edge over pre-trained BERT, resulting in a 2% AUROC lift on prediction of apply.

Machine Learning and Relevance Engineer Intern

LinkedIn

Jun 2018 – Sep 2018 Sunnyvale, CA

- Jobs Marketplace Team under Careers AI.
- Worked on recommending daily budgets to job posters (advertisers).
- Implemented an end-to-end offline training and evaluation pipeline using an internal machine learning tool and Spark Scala.
- Investigated unexpected coefficients during the training phase using Spark notebooks and R to examine the data.

Data Scientist, Analytics, Intern

Facebook

Jun 2017 – Sep 2017 Menlo Park, CA

- Product Navigation Team under Core App Pillar.
- Implemented a pipeline to regularly run PCA and K-means clustering on a large dataset, using Hive, Presto, Python, and other internal tools.
- Performed several other tasks, including fitting linear/logistic regression models, to find insights and give business recommendations.

EDUCATION

M.S. Computer Science – Spec. in Artificial Intelligence & Theoretical Computer Science

Stanford University **GPA: 4.06**

Sep 2018 – Jun 2020 Stanford, CA

B.S. Computer Science
B.S. Statistics
B.S. Mathematics (Comprehensive)

University of Washington **GPA: 3.92**

Sep 2014 – Jun 2018 Seattle, WA

LANGUAGES

Java | Python | C++ | SQL | R

COURSEWORK

Computer Science

- Machine Learning for Big Data
- Computer Vision
- Artificial Intelligence
- Natural Language Processing
- Deep Generative Models
- Probabilistic Graphical Models
- Learning Theory
- Randomized Algorithms & Probabilistic Analysis
- Incentives in Computer Science
- Reinforcement Learning
- Optimization & Algorithmic Paradigms
- The Modern Algorithmic Toolbox

Mathematics & Statistics

- Linear & Convex Optimization
- Fundamental Concepts of Analysis
- Topology & Differential Geometry
- Modern Algebra
- Combinatorial Theory
- Statistical Machine Learning
- Applied Statistics & Experimental Design
- Applied Regression & Analysis of Variance
- Stochastic Processes

Software Engineering Intern

Google

Jun 2016 – Sep 2016 Mountain View, CA

- Flexible Creatives Team under Search Ads.
- Designed and implemented a multi-stage pipeline starting from collecting data from ads serving logs to computing a score used for evaluating creatives within an ad group, using Flume, C++, SQL, and other internal tools.
- Based on these computed scores, possibly recommend to advertisers which creative(s) to remove from the ad group in order to boost performance of the ad group and increase revenue for both advertisers and Google.

Undergraduate Teaching Assistant

University of Washington

Sep 2015 – Jun 2018 Seattle, WA

- CSE 312: “Probability for Computer Scientists”.
- Selected to win the Bob Bandes Memorial Student Teaching Award.
- Prepared and gave lectures in professor’s absence to 100+ students.
- Prepared and led "advanced topics" sessions, on material not typically seen in the course.

Undergraduate Research Assistant

University of Washington

Mar 2017 – Jun 2017 Seattle, WA

- Worked under Professor Sara Billey on "Graphs and Machine Learning" in the Washington Experimental Mathematics Lab (WXML).
- Goal is to create a database of graphs (nodes/edges) from the arXiv, in which people who currently are doing research involving graphs can search for papers (if any) that their graph(s) are contained in.
- Have thousands of unlabelled images scraped from arXiv, and my work is to help classify the images which contain graphs so the features of the graph can be extracted and used in search. Used convolutional neural networks with tensorflow, data augmentation, spatial pyramid pooling, ensemble methods, and other ML methods.