Akhil Jalan

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EDUCATION

University of California, Berkeley (Graduation: May 2019) **GPA: 3.98/4.00**
B.A. Applied Mathematics (Concentration: Machine Learning)
Selected Coursework: Machine Learning, Deep Neural Networks, Algorithms, Stochastic Processes, Real Analysis

HONORS AND AWARDS

2nd Place Team, Citadel West Coast Summer Invitational Datathon (50+ teams)
Finalist Team, Data for Good Competition, UC Berkeley Center for Technology, Society, and Policy
Regent's and Chancellor's Scholar, UC Berkeley Class of 2019 (Awarded to top 2% of undergraduates)

WORK EXPERIENCE

Data Science Intern Foster City, CA
Agari June 2018-August 2018
- Cross-validated machine learning models (logistic regression, random forest) to achieve 72% test accuracy for new subject-line feature in email risk model
- Analyzed 10 million+ emails in Spark for nickname impostor detection
- Tested high-dimensional word embeddings of (word2vec, GloVe) for feature engineering of subject lines

Undergraduate Researcher, DARPA Spectrum Collaboration Challenge Berkeley, CA
Professor A. Sahai February 2018-October 2018
- Implemented Recurrent, Bidirectional Long Short Term Memory (LSTM) neural networks to learn 100% accurate radio demodulation schemes for DARPA research challenge
- Identified theoretical limits of radio message recovery across 10 Signal-to-Noise Ratios (SNR) and 4 unique modulation schemes
- Studied 300+ hyper-parameter configurations (learning rate, layer depth, activation functions, etc) for neural networks to solve Witsenhausen problem in paired radio communication

Undergraduate Researcher, Facility Location Optimization Berkeley, CA
Professor G. Ranade February 2018-Present
- Compared fairness of 12,000+ unique hospital placement schemes in Alameda county
- Solved 11 unique fairness metrics in hospital allocation via Linear/Quadratic Programming optimizers
- Quantified relative impact of hospital opening on 7 unique racial groups, 4 health insurance statuses, and 4 income levels using custom-made dataset from US Census and CA Health and Human Services

Software Engineering Intern Sunnyvale, CA
Hashcut May 2017-August 2017
- Proposed and created video contest automation algorithm using Javascript jQuery and HTML Bootstrap

PROJECTS

Machine Learning for Counterterrorism (Collaborative)
- Predicted success rates of terrorist attacks with 93% accuracy using random forest model
- Improved random forest, neural network prediction accuracies 1%, 5% via cross-validation
- Isolated top-20 salient features for successful attacks in random forest and regression models

Deep Neural Style Transfer via Cyclic Generative Adversarial Networks (Collaborative)
- Fine-Tuned Google Magenta model for generalized neural style transfer in cycle-GAN framework
- Re-trained style transfer model on Microsoft COCO dataset for robustness

TECHNICAL SKILLS

Languages: Python (most proficient), Julia, R, SQL, Java, MATLAB, Bash, Javascript, HTML5, LaTeX
Python Libraries: Tensorflow**,** Numpy**,** Scikit-learn, Pandas, Scipy, Matplotlib, Scrapy
Tools: Spark, Amazon Web Services (AWS) S3, AWS EC2, Google Cloud Compute, Jupyter Notebooks, Cron
Interests: Deep Learning, Optimization (Convex, Quadratic), Topological Data Analysis (TDA)