

# Akhil Jalan

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## EDUCATION

### University of California, Berkeley (Class of 2019)

GPA: 3.98/4.00

*B.A. Applied Mathematics (Concentration: Machine Learning), B.A. Computer Science*

*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-Present

- Classified 10 million+ emails in Spark for account takeover attacks (ATO) detection
- Created 100-dimensional word embedding of email subject line to predict email phishing attacks
- Cross-validated machine learning models (logistic regression, random forest) to achieve 85% accuracy on subject line intent classifier

### Undergraduate Researcher, DARPA Spectrum Collaboration Challenge

Berkeley, CA

*Professor A. Sabai*

February 2018-Present

- 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 100+ 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 US Census Data

### 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
- Extracted salient features for successful attacks in random forest and regression models

### Deep Neural Style Transfer via Cyclic Generative Adversarial Networks (Collaborative)

- Beat style/content scores of Google Magenta team by >2% fine-tuning neural style transfer
- Trained 16 million+ parameters via state-of-the-art Cyclic GANs research

## 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