Kevin Miao

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Education

University of California, Berkeley **GPA: 3.838**
B.A. Computer Science; May 2021 *(Expected)*
Relevant Coursework: Data Structures, Computer Architecture, Discrete Mathematics & Probability, Computer Programs, Algorithms, Artificial Intelligence, Machine Learning *(In Progress)*, Computer Vision and Computational Photography *(In Progress)*, Data Science, Principles and Techniques of Data Science, Innovation Engineering: 5G&AI, Linear Algebra, Probability for Data Science, Data and Business.
Extracurriculars: Dept of Data Science Student Panel *(Founder)*, California Varsity Lightweight Rowing *(Vice-President, Coxswain/Oarsman)*, Data Science Society at Berkeley (*Project Manager)*.

Skills

Technologies: **Python** (Django, Pandas, Numpy, Spark, SciKit-Learn, SciKit-Image, PyTorch, seaborn, matplotlib), **Java**, **C** (OpenMP), **SQL**, **HTML/CSS/JS**, **SwiftUI**, **Git**, **RegEx**, **Tableau**, **Vim**
Interests: Portrait Photography, Computational Biology, Health and Fitness, Technology in Politics

Experience

University of California, San Francisco (Bakar Computational Health Science Institute) Dec 2019 - Present
Machine Learning Researcher *San Francisco, CA*

- Conduct Machine Learning Research to improve healthcare through predictive modelling, extracting patterns and streamlining and rescaling Data Pipelines.
- Assist Principal Investigator with code review, facilitation of weekly discussions and communication with hospital staff.

PayPal Aug 2019 – Dec 2019
Data Science Consultant *San Jose, CA*

- Advised and implemented structural changes on data-driven projects developed by PayPal Innovation Lab leading to an increase of **40%** in employee engagement and innovation.
- Conducted NLP and regression analysis to assess performance of employee reward system and to develop better feature sets to streamline data analysis. Created dashboard to automate data inference for user.

UC Berkeley, College of Engineering Jun 2018 – Present
Teaching Staff ***"Data Structures"*** and ***"Intro into Data Science"*** *Berkeley, CA*

- Running weekly sections, Office Hours and grading for *Data Structures* and *Introduction into Data Science,* yielding highly satisfactory student evaluations **(8.9/10).**
- Instituted a cross-level student panel to assess quality and relay fast feedback to professors overseeing the class.

Publications

UCSF: Cancer Prediction *(Under Review)* | Python/Jupyter, GLMNET, SQL, Seaborn, SciKit Learn

- First-authoring a paper on the prediction of unplanned hospitalizations of cancer through Tree Models, Gradient Boosting and Logistic Regression obtaining a model with a ROCAUC of 85%.
- Setting up clinical trials at UCSF to integrate predictive modeling with the clinical workflow and finetune/assess efficiency of the presence of ML in Healthcare.

UC Berkeley: Genomics and Olfaction | Python/Jupyter, Seaborn, SciKit Learn

- Co-published paper on "Olfactory receptors tuned to volatile mustard oils in fruitflies" through visualizations and text.
- Conducted statistical tests, carried out dimensionality reductions on genomic and behavioral data.

Projects

COVID-Dashboard (Vejovis) | Python, SciPy, Pandas, Seaborn, HTML/CSS

- Assembled a real-time COVID-dashboard modelling the projected CA cases Time-Series Modelling.
- Developed dashboard (front/backend) created supportive visualizations on projections and social media sentiment.

Restaurant Queue Manager | Python, Django, HTML/CSS

- Created restaurant queue manager supporting customer database, waiting time indication, check-in features for in-person dining and an ordering system for streamlining contactless takeout for parent's family restaurant during COVID.

Network Optimization | Python, NetworkX, AWS (EC2)

- Competed in Algorithms class in solving a network optimization problem through altering the Steiner Tree optimization algorithm, ranking in the top 30% of the class with respect to runtime on 1000 inputs.

Handwritten Digit Classifier | Python, PyTorch, AWS (EC2)

- Implemented forward and backward propagation for a standard neural network to perform digit classifier with a 93% accuracy. Wrote and optimized Matrix Multiplication, Softmax, ReLu algorithms in Assembly.

Alzheimer's and MRI | Python/Jupyter, Matplotlib, TensorFlow

- Constructed a **CNN** predicting the Severity of Alzheimer's Disease from clinical MRI Images with an **accuracy ~85**%.