# Joshua Vendrow

Graduating CS/Math major with experience in software development and ML research. Seeking roles as an ML engineer, applied scientist, or software engineer.

## EDUCATION

**UCLA** - *B.S. Computer Science and Applied Mathematics*
3.94 GPA | Minor in Philosophy | Expected June 2022

## EXPERIENCE

### Apple — *Data Science Intern*

June 2021 - September 2021 | Cupertino, CA

- Developed deep learning and computer vision models within Security team.
- Set up data pipeline, training, and evaluation using CoreFlow and Turi.
- Deployed CoreML model into IOS software to run demo on the newest iPhone.

### UCLA Applied Math — *Research Assistant*

AUGUST 2019 - PRESENT | Los Angeles, CA

- Designed and implemented ML models, created and ran experiments, and wrote research papers, leading to publications in top conferences (IEEE ICASSP, ACSSC)
- Collaborated with professors, postdocs, and PhDs to complete projects in computer vision, network science, deep learning, and optimization.

### Harvey Mudd, Department of Math — Research Intern

AUGUST 2021 - PRESENT | Los Angeles, CA

- Led and organized multiple data science projects under Harvey Mudd faculty.
- Trained other students in research fundamentals, Pytorch, Linux.

### LymeDisease.org — *Research Intern*

JANUARY 2021 - MARCH 2021 | Los Angeles, CA

- Set up ML pipeline and preprocessing for large scale medical patient data.
- Identified factors contributing to high antibiotic response in Lyme patients.

### RingCentral — *Software Engineering Intern*

JUNE 2017 - JULY 2017 | Belmont, CA

- Created an automated testing program to assess quality of streaming data passed over a server connection with JavaScript and Node.js using WebSocket.

## OPEN SOURCE SOFTWARE PROJECTS

### Fast Nonnegative Least Squares [PyPi] [Github]

- Implemented the FNNLS algorithm, Set up CI/CD workflow using Travis CI.
- Wrote a program to demonstrate improvements over the popular SciPy package in execution time for random matrices.

### Network Dictionary Learning [PyPi] [Github] [arXiv]

- Develop a method for learning structures from large-scale graph data.
- Outperformed state of the art graph neural network models in link prediction.

## SELECTED PUBLICATIONS (full list at joshvendrow.com)

[1] **J. Vendrow**, J. Haddock, E. Rebrova, D. Needell. "*On a Guided Nonnegative Matrix Factorization.*" ***IEEE ICASSP***, 2021. [IEEE] [arXiv] [Github]

[2] **J. Vendrow**, J. Haddock, D. Needell. "*Neural Nonnegative CP Decomposition for Hierarchical Tensor Analysis*" **Asilomar Conf. on Sig. Sys. and Comp.**, ***to appear***, 2021.

[3] **J. Vendrow**, J. Haddock, D. Needell, L. Johnson. "*Feature Selection from Lyme Disease Patient Survey Data.*" ***Algorithms***, 2020. [Journal] [Github]

## CONTACT


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## SKILLS

Python, Java, C/C++
Javascript, CSS, HTML

Git, Unix/Linux, Turi Create

TensorFlow, PyTorch, scikit-learn, NumPy, SciPy, Cirq, Qiskit

Data Visualization, Multithreading, CI/CD

## SELECTED COURSEWORK

**Graduate**
Quantum Programming
Reinforcement Learning
Neural Nets / Deep Learning
ML for Bioinformatics
Convex Optimization
Linear Programming

**Undergraduate - CS**
Operating Systems
Applied Numerical Computing
Machine Learning
Algorithms and Complexity
Formal Languages / Automata

**Undergraduate - Math**
Stochastic Processes
Probability Theory
Discrete Math
Real Analysis
Linear Algebra

## CLASS PROJECTS

CS 239: Implementing Quantum Algorithms and Running on Google and IBM Quantum Computers [Report]

EE 239AS: Applying Proximal Policy Optimization to OpenAI Environments
[Report] [Github]

EE 247: Classifying Movement Related EEG Data using Neural Networks
[Report] [Github]