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 - Present | Cupertino, CA

- Developed and implemented deep learning models for computer vision applications within the Apple Pay Security team.
- Set up data pipeline, training, and iOS demo using Core ML and Turi.

UCLA Applied Math — *Research Assistant*

AUGUST 2019 - PRESENT | Los Angeles, CA

- Wrote and published papers in top conferences and academic journals.
- Collaborated with professors, postdocs, and PhDs to complete projects in computer vision, network science, deep learning, and optimization.

LymeDisease.org — *Research Intern*

JANUARY 2021 - MARCH 2021 | Los Angeles, CA

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

NSF REU — Undergraduate Researcher

JUNE 2020 - JULY 2020 | Los Angeles, CA

- Created program to preprocess handwritten text from CA Innocence Project; used Google Cloud computing workflow for character recognition.
- Applied ML models to predict synchronization of coupled oscillators.

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 from an influential paper by Bro and De Jung.
- Outperformed the popular SciPy package in execution time for random matrices.
- Set up CI/CD workflow using Travis CI for automated testing and maintainability.

Network Dictionary Learning [PyPi] [Github] [arXiv]
- Collaborated with a professor and postdoc to develop a method for learning structure from large-scale network data.
- Outperformed state of the art models in the link prediction task.

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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⧇ github.com/jvendrow

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]