Neel Redkar

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Education

University of California Los Angeles

B.S.E Computer Science + B.A Philosophy   *4.0 GPA*   **Expected Grad.** 2026

Work/Research

NLP Researcher | Peng's Language Understanding & Synthesis Lab | Los Angeles   *Fall 2023-Current*

Building diffusion language models and reinforcement learning methods to optimize them—WIP ;)

ML/Data Research Intern| Fondazione Bruno Kessler Research | Trento, Italy   *Summer 2022*

Developed ML models to predict air quality from IoT sensors, lowering costs. Manipulated waveform data, denoising large amounts of data. Used Pytorch, Pandas, Numpy, and developed novel variational autoencoder unsupervised translation learning pipeline.

Data Science Intern | Roambee | Bay Area   *Summer 2021*

Developed a moonshot Node Intelligence program to create map interfaces to improve using unsupervised learning with incoming data. Used Uber H3 clustering and Apache big-data pipelines for threaded performance.

Web Development Lead | Stanford TeachAids | Palo Alto   *Summer 2020-2021*

Worked on multiple projects including CoviDB and CoviDB Speaker Series, as well as headed development at CoviDB for Kids. Websites cited by the Center for Disease Control—Next.js

Sinerider | Lead Game Architect & Developer | https://sinerider.com   *Summer 2022*

Recruited by 3blue1brown (Grant Sanderson) to build a game to inspire love for math & graphing in young kids. Developed using a custom game engine along with Crockford classless javascript! #1 on YC HackerNews

Volunteer Organization

Summer of Making | Tech Lead/Organizer | https://summer.hackclub.com   *2020-2021*

Summer grants for people from 28 countries and 143 different cities to learn and create projects. Raised over 50K in cold emails, with GitHub & Adafruit as the main sponsors!

AngelHacks | Organizer Director of Technology | https://angelhacks.org   *2019-2023*

Successfully organized a hackathon in Los Angeles to help computer science education, raising over $15,000 total with 130+ participants with sponsors ranging from SnapChat to SpaceX!

Projects

CarbNN — Independently created a novel reinforcement learning algorithm for crystal generation. Generated likely crystals for carbon capture + conversion to fuel & increased accuracies by 12%. Presented at AAAI & international award.

Nujjet—Created a low cost neuro headset to monitor and modulate your brain with audio, we can help you study more effectively, and make long term changes. Uses active reinforcement learning, signal processing/denoising, EEG, and a Next.js UI. Received VC offers at ~80k valuation.

LeishNN—Used semi-supervised learning, Variational Autoencoders & self organizing maps to develop novel drugs for leishmaniasis!

Conferences/Papers

- CarbNN: A Novel Active Transfer Learning Neural Network To Build De Novo Metal Organic Frameworks (MOFs) for Carbon Capture (AAAI23)

Awards

- Davidson Fellow $25k *(Fall 2023)*
- 2nd Place International Science and Engineering Fair + 2 special awards *(Spring 2022)*
- Chevron Innovation Grant 2022 & 2023
- 2nd Place International Best AI/ML Research *(Spring 2022)*
- Global International Pete Conrad Scholar, Cyber Track *(Fall 2021)*
- Lifetime PVSA Volunteer Service Award
- Invited to Google Cloud Next1

Skills: Fullstack Dev (React/Next.js, Golang, Nodejs, Rust), Data Science/ML Research (Python), Server Administration, Solidity, Haskell, MongoDB, SQL, Reinforcement Learning, National Policy Debate!