AADITYA PRASAD

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EDUCATION

University of California, San Diego September 2022 - (Expected) June 2023
Masters of Science, Data Science with
Specialization in Computational Neuroscience

University of California, San Diego September 2019 - June 2022
Bachelor of Science, Bioinformatics GPA: 3.649/4.00

Relevant Courses: Advanced Data Structures, Design and Analysis of Algorithms, Optimization for Data Science I, Neural Data Science, Introduction to Machine Learning, Deep Learning, Genetic Algorithms

EXPERIENCE

Salk Institute for Biological Studies November 2021 - Present
Undergraduate Researcher, Talmo Lab

- Spearheading project focused on understanding the role of natural image statistics in forming neural representations of biologically similar artificial neural networks
- Trained convolutional neural networks(CNNs) in tensorflow and keras on various datasets such as ImageNet, CoCo, and CREMI, then measured their neural similarity using state-of-the-art benchmarks like Brain-Score

UCSD Moores Cancer Center June 2021 - Present
Undergraduate Researcher, Mesirov Lab

- Led bioinformatics project investigating the role of the *MICAL2* gene in pancreatic cancer metastasis
- Leveraged differential sequence analysis and network propagation techniques to uncover protein-protein interactions with *MICAL2*

Jacobs School of Engineering: CSE Department January 2021 - Present
Computer Science Tutor

- Tutored CSE 100: Advanced Data Structures taught by Professor Niema Moshiri and Paul Cao.
- Lead lab hours for one-on-one teaching and helping students with code, tested programming assignments and proof-read written tests, answered questions on class discussion board
- Taught object-oriented programming in C++ covering subjects such as binary trees, graph algorithms, hash maps, tries, fast-string searching.

Salk Institute for Biological Studies October 2020 - Present
Undergraduate Researcher, Manor Lab

- Helped develop workflow using ilastik and trackmate to automatically track the movement of lysosomes and mitochondria in 3D time-lapses in order to study the differences in organelle dynamics of neurites in patients with Charcot-Marie-Tooth (CMT) disorder vs unaffected patients
- Wrote scripts in Python using numpy, pandas, seaborn, and napari libraries to quantify neuronal organelle dynamics from tracking results of above workflow
- Developed deep learning model based on a U-Net architecture with different loss functions such as cross-entropy and mean-squared error (MSE) as well as auxiliary learning tasks such as local shape descriptors(LSDs) using pytorch and gunpowder for automatic 3d instance and semantic segmentation of neuronal mitochondrial populations in electron microscopy imaging

Undergraduate Bioinformatics Club @ UCSD (UBIC) May 2021 - Present
Vice President External

- Responsible for overseeing Chalk Talk seminar series, bioinformatics workshops, industry recruiting talks, community service events, socials, and collaborations with other UCSD clubs.

TECHNICAL STRENGTHS

Languages	Python, Java, C++, R, Bash
Libraries & Tools	Git, PyTorch, Tensorflow/Keras, Scikit-Learn, Numpy, Pandas, Seaborn, Matplotlib