

Sidharth Hulyalkar

408-529-8684

sidsoccer21@gmail.com

[LinkedIn](#)

[GitHub](#)

Searching for a new role designing AI/machine learning/computation workflows for scientific applications.

WORK EXPERIENCE

STEALTH NEUROAI STARTUP

San Francisco, CA

Founding Engineer (Work Trial)

September 2025

- ◆ Collaborated on designing a multimodal data integration platform supporting large-scale brain-state analysis.

DATAJOINT

Houston, TX

Neuroscience Data Engineer II

April 2022 - May 2024

- ◆ Led client projects at Harvard and the Allen Institute. Developed workflows to visualize ~12TB multimodal datasets parallelized across multiple cloud servers to allow scientists to interpret neatly sorted data 16hrs after data collection.
- ◆ Designed AWS data pipelines integrating DataJoint elements to process electrophysiology, calcium imaging, fiber photometry, pose estimation, facial inference, and behavior data and efficiently store in DataJoint database schemas.
- ◆ Implemented DeepLabCut pose estimation and Facemap facial recognition, model training/inference into DataJoint's open-source framework and deployed both in cloud architectures for Lu Lab at Indiana University.
- ◆ Contributed to 20+ open-source DataJoint repositories and created visualization/testing tools across 5 data modalities.

NEURAL ENGINEERING AND TRANSLATION LABS

La Jolla, CA

Graduate Research Assistant (Lead Lab Programmer)

November 2017 – April 2022

- ◆ Discovered precise neural patterns in 3B+ LFP datapoints using DTW algorithm and parallel computing on SDSC.
- ◆ Established multiple custom behavioral paradigms targeting neural decision-making and inhibition.
- ◆ Built MATLAB pipelines for large-scale LFP/behavior analyses of 8TB+ datasets, including ERP/ERSP extraction.

PROJECTS

- ◆ Helped nonprofit (CoEval) with backend and frontend development of a website deployed on cloudflare workers to compose a database of scientific AI companies allowing select users to vote and highlight leading AI practices.
- ◆ Reconstructed ChatGPT-2 from scratch. Implemented protein tokenization to fine-tune a large protein language model.
- ◆ Created a novel method to augment neural spike data to build a large training set from a limited sample size. Built Kalman filter model to predict arm position based on M1 neurons, where augmented dataset improved model accuracy.
- ◆ Single Cell RNA seq analysis of Leukemia relapse using supervised and unsupervised learning (PCA, ICA).
- ◆ Metastatic Breast Cancer analysis using Bulk RNA seq and ChIP-seq to determine relevant Transcription Factors.
- ◆ Fit Pharmacokinetic-Pharmacodynamical Nonlinear Model of Metformin using least squares optimization.
- ◆ Tumor Classification on MRI image set using a CNN deep learning (DL) model with 96 percent accuracy.
- ◆ Depth Mapping: Trained CNN DL model to classify images based on the depth map created from Kinect images.
- ◆ Senior Design: Intracranial Pressure (ICP) Monitor, designed a biocompatible circuit for neural implantation.
- ◆ Undergraduate: Machine Learning analysis of M1 neuron data (LR, PCA, LASSO), Hebbian Learning Neural Network analysis, Modeling of Blood Glucose Regulation using finite difference method, EMG Morse code decoder–continuous data acquisition/spike analysis through MATLAB, Neural Data Augmentation neural network performance evaluation.

EDUCATION

University of California, San Diego

La Jolla, CA

Master of Engineering in Bioengineering, Graduated: December 2021

Bachelor of Science in Bioengineering: Biosystems, Graduated: June 2020

TECHNICAL SKILLS

- ◆ **AI/ML & Data Science:** PyTorch, TensorFlow, Keras, XGBoost, DataJoint, SpikeInterface, DeepLabCut, Facemap, Suite2p, CalmAn, HuggingFace Transformers, TorchBrain, Dask, Pandas, NumPy, SciPy, Scikit-Learn/Image, CUDA, OpenCV, Signal Processing (DTW, Kalman Filtering, ERP/ERSP), PCA/ICA, Granger Causality, Q-Learning, Statistical Modeling, Streamlit, Dash, FastAPI, Seaborn, Matplotlib, Bokeh, CNNs, RNNs, LSTMs, U-Net
- ◆ **Languages & Tools:** Python, MATLAB, JavaScript (TypeScript), SQL (pgSQL), R, Java, HTML/CSS, YAML, HDF5, TOML, JSON, Git, Jira, Vim, tmux, Jupyter, DataJoint, Nextflow, RasPi, Arduino, Parquet, MCAP, Foxglove, datarepo
- ◆ **Cloud & DevOps:** AWS(EC2, S3, Kinesis, Lambda, CloudWatch), Google Cloud, Cloudflare, DataDog, Docker, Kubernetes, Singularity, Terraform, Linux/UNIX, CI/CD, GitHub Actions, tmux, SSH Tooling, Prometheus, Grafana

SELECT PUBLICATIONS(MORE CAN BE FOUND ON MY [GOOGLE SCHOLAR](#))

- ◆ *Beta and High Gamma Oscillations in the Cortico-striatal Network Reflect Reward Certainty on a PRL Task - 2025*
- ◆ *Cortico-striatal Beta Oscillations as a Reward-Related Signal - 2024*
- ◆ *Electrophysiological Correlates of Rodent Default-Mode Network Suppression Revealed by Large-Scale Local Field Potential Recordings– 2021*
- ◆ *Mapping Large-Scale Networks Associated with Action, Behavioral Inhibition, and Impulsivity – 2021*