

Nathaniel Rose

Oakland CA, | Bronx, NY | London, UK
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Accomplished and motivated research engineer advancing computational systems and enhancing the fields of ML & neurotechnology.

Education:

Syracuse University

L.C. Smith College of Engineering and Computer Science
Bachelor of Science; May 2014
Major: Computer Engineering
Minor: Information Technology, Design and Startups



Imperial College London

Department of Bioengineering - Brain and Behavior Lab
Master of Research; October 2021
Major: Neurotechnology
Research: Gaze Selection & Brain Machine Interfaces



Skills:

Development Skills:

Languages: C, C++, Python, C# Java, JavaScript, XAML, GoLang, Typescript, x86 Assembly, VHDL, PHP

Databases: PostgreSQL, SQL Server, MongoDB, Cassandra, CosmosDB, BigQuery, GraphQL

Web Dev: Flask, Node.js, Jekyll, Django, ASP.NET, Angular JS, Bootstrap, MEAN Stack

Cloud Solutions: Apache Spark, Apache Airflow, Databricks, DataHub, Superset, Docker Swarm, Kubernetes, FiveTran, Terraform, DataDog, RabbitMQ, Apache Kafka Apache Beam, Portworx, Travis CI, Azure DevOps, GitLab, GitOps, PagerDuty, Twilio

Data Science & ML:

Tensorflow, Pachyderm, MLOps, Jupyter/Ipython Keras, ImageNet, AudioSet, ML Studio, CNTK, OpenCV, Reinforcement Learning, LSTMs, Dalle-2, Deep Reinforcement Learning, Q Learning, CNNs, XGBoosts, Perceptrons, Evals, Prompt Orchestration, FAISS, LangSmith, RAGAS, NeuroAI, CausalML

Neuroscience:

EEG, PyEEG, EMG, OpenBCI, BlueMuse, Muse Headset, Emotiv, SMI Eye tracking, Enophone, HTC Vive

Other:

Solidity, DAOs, Tokenomics, Sidechains, EVMs Smart Contracts, JGrasp, Maple 15, Finale, Pro Tools 9, Photoshop, Serato, iCUB, DSP, Kinect, Public Speaking, Event Planning, Saxophone, Windsurfing, Sailing

Professional Work Experience:

03/26-Present **Cerberus Neurosecurity Research Institute**

San Francisco, CA

Co-Founder | Executive Director

- Cofounded a nonprofit research institute advancing brain-computer interface and neural data security across four pillars: Information Transit, Wetware, Cognitive Defense, and Neural Governance.
- Leading 2026 deliverables including a Neurosecurity SOTA, threat taxonomy, DefCon Village, workshops, and standards contributions.

03/22-Present **Lymbic AI Ltd.**

London, UK

Co-Founder | CTO | ML Engineering Manager

- Cofounded neurotechnology company targeting the use of EEG for a privacy preserving biometric security paradigm.
- Lead team which investigated and developed novel CNNs that classified subjects based on Muse2 EEG processed resting state data.
- Secured BCI device company partnerships, competed in pitches, secured \$200,000 in pre-seed funding and demoed at global conferences.
- Developed ML Ops pipelines for training of neural signals including feature extraction, preprocessing, model training, deployment and edge compute

03/23-05/25 **Circle Internet Financial LLC.**

Boston, MA

Staff Data Platform Engineer

- Provide ML data platform capabilities for data science teams to perform data preparation, model training and run experiments.
- Developed Circle enterprise data catalog for company data asset discovery, governance, lineage and monitoring for USDC activity.
- Owner of Data Platform ETL infrastructure supporting Airflow, Migrated Airflow orchestration from MWAA to Astronomer.

06/20-02/23 **Ripple Labs.**

San Francisco, CA

Sr. ML Ops Engineer | Sr. Software Engineer | Global ERG Lead

- Partnered with applied scientists and PMs to ship real-time feature store in Databricks supporting production ML workflows.
- Constructed deployable CI/CD pipelines for data services, Unit Testing and Integration Tests logged with Airflow & GitLab.
- Worked with Apache Airflow, Fivetran, Cloud Composer, Big Query, Kubernetes Pod Operators and Terraform Cloud.
- Built scalable DAGs, data contracts, materialized views and reporting of global digital currency transactions on scalable GCP infrastructure.
- Presented at international summits and conferences on decentralized autonomous organizations, gitops, data orchestration and ETLs.

07/14-05/20 **Microsoft Corp.**

San Francisco, CA

Technical Evangelist | SDE | SDE II | Regional ERG Lead

- Shipped and contributed to open-source application Terraform orchestration project built using Kubernetes (Project Bedrock).
- Worked with Apache Spark, DataBricks, DataStax, Lambda Architectures and Time Series implementations.
- Partnered with SF developer community in building projects that further the IoT, NeuroTech, and Data Science fields.
- Developed scalable ML Data Science pipeline on Kubernetes leveraging Tensorflow, Imagenet, AudioSet, and automated model labeling.

Research Publications:

[Bagley et al. - Threat Vectors and Existing Defense Methods for Security in Neurotechnology \(2026\)](#)

[Preprint] EEG Dataset Sampling Rate Investigation for Participant Identification (2026)

[Preprint] Measuring Data Reuse in Open Neuroscience: A Systematic Analysis of the DANDI Archive (2026)

Research Work Experience:

Imperial College London | Enhanced VR & BMI Robot (2021)

In this thesis through the ICL: Brain and Behavior Lab under Professor Aldo Faisal, we developed a system that leverages Gaze tracking to control a virtual UR10 robot in Unity. The decoded classification of the eye fixation signals is coupled with ML and action grammar to provide a novel solution to the midas touch paradigm in gaze selection.

UC Berkeley | EEG Brain State Decoding (2019)

In this study, we reproduce the findings of Tayeb et al, a paper that use dCNNs to classify motor imagery data from EEG test subject. Through the scope of memory equivalent capacities this paper concludes the results cannot be repeated or reproduced for the shallow methods and that the high accuracy for the deep models originates from the flawed combination of sliding-window preprocessing and 5-fold cross validation.

Italian Institute of Technology| Summer Resident Researcher (2013)

Introduced to basic A.I. and robotic engineering fundamentals including motor control, and neural networks. Developed algorithm using C++ that was used to study humanoid predictive rewards and functionality. Studied emerging research in robotics such as tactile servoing.

Memberships and Organizations:

NSBE Jr. Bay Area	Founder 2019
NeuroTechxSF	Member 2015
TealsK-12	CS Teacher 2015

Certifications

GCP Associate Engineer	2020
Databricks CD Apache Spark	2018
MCSD: Azure Solutions Architect	2017



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