

LEILANY TORRES DIAZ

Cambridge, MA · leilany.torresdiaz@gmail.com ·

linkedin.com/in/leilany-torres-diaz · github.com/Leilanyt

OBJECTIVE

Research assistant and data analyst with hands-on experience in neuroimaging pipelines, ML-based neural decoding, and computational psychiatry methods. Experienced in managing and analyzing complex datasets (fMRI, behavioral), writing reproducible analysis code, and supporting research from data collection through publication. Seeking an RA or data analyst position in a neuroscience, cognitive, or computational psychiatry lab.

EDUCATION

Post-Baccalaureate Researcher · Kempner Institute, Harvard University *Cambridge, MA · Jul 2024 – Jul 2026 (expected)*

Graduate Coursework: Biological & Artificial Intelligence · Vision Systems · Computational Psychiatry

B.S. Neurobiology, Physiology & Behavior · University of California, Davis *Davis, CA · Jun 2021*

RESEARCH & DATA ANALYSIS EXPERIENCE

Neuro-AI Researcher · Kempner Institute, Harvard University *Cambridge, MA · Jul 2024 – Present*

- Built and maintained automated Python pipelines to preprocess, parcellate, and analyze fMRI datasets; benchmarked 30+ deep vision models against neural responses across visual cortex regions.
- Performed representational similarity analysis (RSA), cross-validated model selection, and bootstrapped confidence intervals to quantify model–brain alignment — all in reproducible Jupyter-based workflows.
- Managed and version-controlled all analysis code via GitHub; documented pipelines clearly for use by collaborators.
- Designed and piloted behavioral experiments on visual memorability and object recognition; conducted power analyses and iterative study design refinement.
- Supported preparation and submission of conference materials; presented poster at CCN 2025 (Amsterdam).
- Led a weekly seminar series for 10+ months: coordinated logistics, authored written summaries, and supported scientific communication across a cross-disciplinary team.

Neurorehabilitation Coordinator · Norcal Brain Center *San Jose, CA · Jun 2021 – Sep 2022*

- Collected, organized, and maintained clinical data for 20+ patients per day across TBI, autism, anxiety, and depression diagnoses; ensured data accuracy and integrity for treatment planning.
- Communicated complex neurophysiology and neurofeedback concepts to patients and families; supported protocol adherence and patient engagement.

DATA ANALYSIS & TECHNICAL SKILLS

Programming: Python (advanced), NumPy/SciPy, pandas, scikit-learn, PyTorch, TensorFlow, Git/GitHub

Neuroimaging & Signal Processing: fMRI (task-based & resting-state), rsFC pipelines, RSA, Nilearn, Brain-Score, EEG (MNE-Python)

Statistical Methods: Supervised classification (SVM, ridge regression, CNNs), cross-validation, permutation testing, bootstrapping, Bayesian parameter recovery, hierarchical model fitting

Data Management: Reproducible analysis pipelines, version control (Git), HPC cluster workflows (Slurm), structured documentation

Tools: Jupyter, VS Code, Linux/bash, LaTeX

Languages: English (native) · Spanish (native)

SELECTED ANALYSIS PROJECTS

rsFC Predictive Modeling Pipeline · Personal Project

github.com/Leilanyt/rsFC-Predictive-Pipeline

- Built a complete Python pipeline to classify healthy controls vs. bipolar disorder from resting-state fMRI connectivity (UCLA CNP, N=30) using Yeo/Schaefer parcellations, linear SVM, and 5-fold cross-validation.
- Achieved 73% accuracy (permutation test $p = 0.021$); visualized 7×7 network-level feature weights to identify predictive functional systems.

DNN–Brain Alignment Benchmark · CCN 2025

github.com/Leilanyt/Neuro240_Project

- Evaluated 30+ models on an fMRI dataset (10 participants, 72 stimuli) using unweighted RSA; applied split-half cross-validation for best-layer selection and bootstrapped confidence intervals.
- Showed AlexNet matches or outperforms modern architectures across all ventral stream regions; work published as CCN 2025 conference poster.

Aversive Learning Extension · Computational Psychiatry

github.com/Leilanyt/Aversive_Learning_extension

- Extended a behavioral paradigm (Wise et al.) with RL models, Bayesian parameter recovery, hierarchical model fitting, and posterior predictive checks to probe anxiety and avoidance mechanisms.
- Introduced a novel hesitation parameter to capture decision uncertainty during aversive learning; confirmed parameter identifiability via hierarchical model fitting.
- Completed as a final project for Harvard course in Computational Psychiatry.

PUBLICATIONS & PRESENTATIONS

- **Torres Diaz, L. & Alvarez, G.A.** "Ventral Stream Responses to Inanimate Objects Are Equally Aligned with AlexNet (2012) and Modern Deep Neural Networks." Conference on Cognitive Computational Neuroscience (CCN), Amsterdam, 2025. [\[Poster Presented\]](#)
- **Torres Diaz, L.** "Predictive Modeling with DNN Alignment." Computational Psychiatry Conference, July 2026. [\[Accepted Poster\]](#)

TEACHING & SERVICE

Organizer, ML/Neuroscience Seminar Series · Kempner Institute, Harvard

2024–2025

Recruited speakers, authored technical newsletters, coordinated weekly schedule for 10+ months.

STEM Tutor & Mentor

2021–2022

Tutored students in Chemistry, Calculus, and Spanish; developed individualized data-driven study plans.