

ERIC CITO, BS

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EDUCATION

University of California, San Francisco (UCSF) Post-Baccalaureate

July 2025 – Present

PROPEL: Post-Baccalaureate Research Opportunity to Promote Equity in Learning

University of California, San Diego (UCSD)

Sept 2020 – June 2025

B.S. Computer Engineering | Cognitive Science Minor
NCAA Division 1 Men's Tennis Student-Athlete

SKILLS

Technical: Python, PyTorch, C, C++, Java, MATLAB, R, UNIX, Bash, Git, Containers, Pandas, NeuroDSP, TensorFlow, NumPy, SimpleITK, ITK-SNAP, DICOM

Clinical: PACS, UCSF Air Radiology, APeX, MRI Safety, Human Subjects Protection

Laboratory Skills: Pipetting, Centrifugation, GC Columns, Radioactive Material Handling, Zotero, Microsoft Office Suite, LaTeX

HONORS & AWARDS

2024	IEEE Brain Discovery & Nanotechnology Workshop - Travel Fund - Presentee
2024	Electrical & Computer Engineering Department - Travel Fund
2024	California Louis Stoke Alliance for Minority Participation (CAMP) - Travel Fund
2024	California Louis Stoke Alliance for Minority Participation (CAMP) - Summer Fellowship
2024	UC San Diego's Annual Summer Research Conference Presentee
2024	NCAA Big West Conference Commissioner's Honor Roll
2024	UC San Diego Provost Honors – Spring Quarter
2023	UC San Diego Provost Honors – Winter Quarter
2021	NCAA UC San Diego Men's Tennis Team Most Inspirational Award
2020	NCAA Big West Conference Commissioner's Honor Roll
2017	Weill Cornell Medicine High School Catalyst Program - First Place Poster Presentation

RESEARCH EXPERIENCE

University of California, San Francisco: *Neuromodulation Imaging Lab*

July 2025 – Present

Assistant Prof. Melanie A. Morrison (PI)

Lab Goal:

- Advancing neuromodulation therapies for patients with movement disorders and neuropsychiatric conditions. Extract quantitative information from brain MRI images to study and predict patients' neural and clinical responses to brain stimulation

Project Summaries:

- Co-developing a modular Quantitative Susceptibility Mapping (QSM) imaging pipeline to enhance visualization of deep-brain structures for support Deep Brain Stimulation (DBS) surgical planning
- Co-developing a 2D UNet deep learning model to automatically segment implanted DBS electrodes to localize and visualize electrode placement across brain regions
- Collaborating with MRI technicians to ensure high-quality acquisition of brain scans and verifying that imaging protocols are properly executed

Findings to be presented at:

- 2026 International Society for Magnetic Resonance in Medicine (ISMRM) – *Abstracts Submitted*
 - "2D U-Net Segmentation of Multi-target Deep Brain Stimulation Lead Trajectories on Postoperative Imaging"
 - "Modular Framework for Automated QSM Integration into Deep Brain Stimulation Neurosurgical Planning Systems"

Prof. Terrence Sejnowski (PI)

Lab Goal:

- Advance understanding of the computational principles of the brain and develop machine-learning methods to improve diagnosis and treatment of neuropsychiatric disorders

Project Summary:

- Conducted research under Dr. Margot Wagner and Dr. Alessandra Camassa on developing quantitative diagnostic metrics for neuropsychiatric disorders using machine learning and resting-state fMRI data from the Adolescent Brain Cognitive Development (ABCD) Study (12,000 participants). Designed and implemented an outlier analysis pipeline using Deep Isolation Forest (DIF), a deep-learning-based method for robust outlier detection. Identified key sources of data variability, including regional hotspots of outliers, MRI vendor discrepancies, and unaccounted framewise displacement, improving model accuracy

Presented findings at:

- Summer Research Conference, UC San Diego
- 2024 IEEE Brain Discovery & Neurotechnology Conference
- National Science Foundation California Alliance for Minority Participation (NSF- CAMP) Symposium

Prof. Douglas A. Nitz (PI)

Lab Goal:

- Investigate how the brain encodes and stores spatial representations of the environment to understand the neural basis of navigation

Project Summary:

- Analyzed local field potential (LFP) recordings from hippocampal CA1 neurons in rats during maze-navigation tasks to study the dynamics of spatial memory formation
- Learned and applied signal-processing and filtering techniques to isolate burst oscillations within full LFP signals
- Contributed to research aimed at clarifying the functional dynamics of hippocampal networks and providing insight into how humans perceive and mentally map their surroundings

Prof. Jason S. Lewis (PI)

Lab Goal:

- Develop and optimize radiotracers and antibody-based molecular imaging agents to advance cancer diagnosis and therapy

Project Summary:

- Conducted research under postdoctoral mentor Dr. Sai Sharma on HER2-targeting antibodies, studying how different levels of bioconjugation affect radiotracer synthesis and antibody immunoreactivity
- Synthesized immunoconjugates by reacting trastuzumab with increasing molar excess of isothiocyanato-desferrioxamine (p-SCN-DFO), purified products via size-exclusion chromatography, and quantified DFO-to-antibody ratios
- Found that while immunoreactivity remained stable even with 60-fold DFO excess, the association rate decreased compared to unconjugated trastuzumab, suggesting altered binding kinetics to the HER2 antigen, which could reduce therapeutic efficacy

Presented findings at:

- Weill Cornell Medicine Catalyst Program Poster Session – *First Place Award*

ABSTRACTS & PRESENTATIONS

- **E Cito** et al. “2D U-Net Segmentation of Multi-target Deep Brain Stimulation Lead Trajectories on Postoperative Imaging”, *ISMRM & ISMRT Annual Meeting*, Abstract Submitted, May 2026
- **E Cito** et al. “Modular Framework for Automated QSM Integration into Deep Brain Stimulation Neurosurgical Planning Systems”, *ISMRM & ISMRT Annual Meeting*, Abstract Submitted, May 2026

- **E Cito**, M Wagner, A Camassa, T Sejnowski, "Deep Isolation Forest Outlier Analysis of Large Multimodal Adolescent Neuroimaging Data" *CAMP Symposium*, Poster, Feb 2025.
- M Wagner, A Camassa, V Patro, K Gano, **E Cito**, G Cauwenberghs, T Sejnowski, "Deep isolation forest outlier analysis of large multimodal adolescent neuroimaging data," Functional Imaging and Data Analysis Nano symposium, *The Society for Neuroscience*, Talk, Oct 2024.
- **E Cito**, M Wagner, A Camassa, T Sejnowski, "Deep Isolation Forest Outlier Analysis of Large Multimodal Adolescent Neuroimaging Data" *IEEE Brain Discovery and Neurotechnology Workshop*, Poster, Oct 2024.
- **E Cito**, M Wagner, A Camassa, T Sejnowski, "Deep Isolation Forest Outlier Analysis of Large Multimodal Adolescent Neuroimaging Data" *Summer Research Conference at UC San Diego*, Presentation, Aug 2024.
- **E Cito**, S Sharma, J Lewis, "The Impact of Bioconjugation on Antibody Immunoreactivity" *Weill Cornell Medicine High School Catalyst Program*, First Place Poster, Aug 2018

APPLIED ENGINEERING PROJECTS

Triton NeuroTech: Student Software Engineer

Sep 2022 – June 2023

- Collaborated in a team to build a robotic arm using Arduino, integrating Electromyography (EMG) readings and implementing different neural networks to filter and interpret brain signals for control of robotic arm. Successfully implemented a prototype.
- Coordinated and organized events to enhance the publicity of Brain-Computer Interfaces (BCI) to the public and students.

Self-Driving Remote Controlled Car Racing: AI Project

Sep 2019 – June 2020

- Open-source self-driving platform for small-scale remote-controlled cars
- Configured Raspberry Pi to gather operational data from steering, throttle, and camera to be used for model training, adapting from the open-source Donkey Car platform
- Deployed model on Raspberry Pi, enabling real-time autopilot functionality
- Raced in events and placed as high as second place out of 26 teams

FIRST (For Inspiration and Recognition of Science and Technology): Project Lead

Sep 2008 – June 2019

- Competed in Robotics competitions housing several levels from elementary school to high school including FIRST Lego League (FLL) and FIRST Tech Challenge (FTC)
- Implemented Computer Vision techniques to enable autonomous ball shooting and navigation on the robotic competition field
- Worked with 3-D printing using CAD developing robotic pieces
- Volunteered 50+ hours showcasing robotics to elementary schools, inspiring the future generation of the field of STEM.

LEADERSHIP

NCAA Division 1 Men's Tennis: Team Captain

Sep 2021 – Mar 2023

- Voted Team Captain for the seasons of 2021-2022 and 2022-2023
- Organized and ran captain practices as well as communication between team and coaches
- Selected for Triton Athlete Council - Student-Athlete Advisory Committee - Worked closely with athletic department to enhance the student athlete experience

Private Tennis Instructor: Coach

Sep 2020 – Present

- Designed individualized training and strategized lesson plans for students
- Mentorship to high school students looking to participate in collegiate athletics
- Provided motivational leadership and constructive feedback to enhance performance
- San Francisco Recreation Instructor serving to teach the local community