

# ANDREA RUIZ D'ARGENCE

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I am a highly driven third-year undergraduate student at the University of California, San Diego, interested in the conjunction between neuroscience and technology. Other interests of mine are cognitive science, behavior and genetics. My long-term goal is to improve human experience with novel neurotechnology strategies all while opening new possibilities to students from disadvantaged backgrounds.

I consider myself a hardworking, efficient person seeking to support human nature laboratories. Dependable and with willingness to obtain new skills to help the work setting.

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## EDUCATION

### University of California, San Diego

September 2021- June 2025

Bachelor of Science with a Specialization in Cognitive and Behavioral Neuroscience and a minor in General Biology

Current GPA: 3.792

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## RESEARCH EXPERIENCE

### Salk Institute for Biological Studies

October 2023 - Present

Lab Technician at Tye Lab

San Diego, CA

- Use of pose estimation algorithms (SLEAP) and computational neuroscience techniques for statistical analysis of social homeostasis after isolation
- Behavioral experimentation in mice to determine timescales of social isolation and neuromodulatory activity in the medial Prefrontal cortex post-isolation
- Experimentation and analysis of sexual differences in behavior in mice for timescales of social isolation

### University of California, San Diego - Department of Cognitive Science

August 2022 - Present

Research Assistant at Voytek Lab

San Diego, CA

- Manage large electrophysiological datasets from open data sources on local field potential activity
- Analysis of electroencephalography spectral decomposition and neural oscillations in cortical networks using computational skills to measure and quantify oscillations in time and frequency domains
- Development of Open-Source scripts and composition of notebooks of Power Spectrum Density analysis and Spectral Parametrization in electrophysiological recordings of macaques
- Facilitate science communication by providing feedback to colleagues during journal club

### The Jackson Laboratory

June 2023 - August 2023

Summer Intern at Joy Lab

- Development of a pipeline to analyzed cortex-wide in-vivo two-photon calcium imaging datasets from a skilled reaching task in healthy rodents over a hundred trials, this pipeline will be used to compare circuit interactions in the brain post stroke
- Benchmarked two Open-Source computational toolboxes for calcium imaging recordings on large volumes of data to determine time-locked neuronal activity and task related changes in fluorescence
- Presented results at the JAX SSP 2023 Symposium to share advancements and discuss future directions

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## **University of California, San Diego - Department of Psychiatry** **September 2022 - June 2023**

Research Assistant at George Lab

- Routine handling of laboratory rodents, collection of diagnostic samples, tail marking, record keeping, weekly weighting and behavioral assays
- Statistical data analysis of substance addictive behavior in Excel, Python and R
- Presentation of research advancements alongside colleagues to internal laboratory environment
- Preparing rodent subjects to receive chemical stimulants through self administration upon active lever presses

## **Weizmann Institute of Science**

**July 2021 - August 2021**

Summer Intern at Weizmann Institute

- Awarded scholarship for Dr. Bessie F. Lawrence 52nd International Summer Science Institute
  - Worked virtually with a team of international students to examine cellular heterogeneity in viral-driven cancers to analyze through a software sc-RNASeq in Nasopharyngeal carcinoma patients
  - Application of data processing and graphing through R
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## PRESENTATIONS AND PARTICIPATION

### **Annual Biomedical Research Conference for Minoritized Scientists,** **Poster Presenter**

**November 2023**

- "Cortex-wide In-vivo Two-photon Calcium Imaging Analysis of Mice During Skilled Reaching"

### **St. Jude Children's Hospital National Symposium for Predoctoral Research,** **Poster Presenter**

**October 2023**

St. Jude Children's Hospital

- "Cortex-wide In-vivo Two-photon Calcium Imaging Analysis of Mice During Skilled Reaching"

### **Diversity Equity Engagement at Penn in STEM Program**

**October 2023**

University of Pennsylvania

- Awarded a position in the 2nd cohort of DEEPenn students to build mentorship and contribute to the representation of diversity of students pursuing post-bac graduate degrees in STEM

### **Find Opportunities Abroad, Sharing International Experiences**

**September 2023**

Instituto Tecnológico y de Estudios Superiores de Monterrey, Campus Chiapas

- Presented a talk at ITESM Campus Chiapas to an audience of ~150 high school students about how to find international opportunities, scholarships and what resources they have available as latinx students

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## **18° Lewis L. Judd Young Investigators Symposium, Poster Presenter**

**April 2023**

University of California, San Diego

- "Individual differences of within-session cocaine or oxycodone self-administration behavior in heterogeneous stock rats"

## **Society for Neuroscience (SfN), Attendee**

**November 2022**

## **14° International Science Competition**

**February 2019**

Instituto Tecnológico y de Estudios Superiores de Monterrey

- Participated in the 14th International Science Competition held by Tecnológico de Monterrey in the divisions of Biology and Chemistry
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## LEADERSHIP POSITIONS

### **Chemistry Student Organization Presidency**

**August 2019 - May 2021**

Instituto Tecnológico y de Estudios Superiores de Monterrey, Campus Chiapas

- Guided other high school students through basic chemistry laboratory experiments
- Founded and directed the first GeNiUS Science Fair for secondary students at Tecnológico de Monterrey Campus Chiapas

### **MUNMX, UN Women Moderator**

**November 2019**

Instituto Tecnológico y de Estudios Superiores de Monterrey, Campus Chiapas

- Guided the UN Women panel at the Model of the United Nations held by Tecnológico de Monterrey Campus Chiapas
  - Awarded with a certificate of recognition as best moderator
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## SERVICE

### **Teletón Volunteer**

**August 2019 - December 2019**

Teletón México Foundation

- Provided childcare services and supervision for disabled children ages 5 to 14 years old
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## KEY COMPETENCIES

Proficiency in Python, R, Excel  
and Microsoft Office  
Problem solving

English and Spanish proficiency  
Collaborative mindset  
High ability in scientific literacy

Detail oriented  
Communication  
Self-management