

MATIAS LEANDRO ANDINA



EDUCATION

Current
|
2021

2018
|
2016

2015
|
2010

- **PhD. Student, Neuroscience**
Massachusetts Institute of Technology 📍 Massachusetts, USA
- **MSc., Neuroscience**
University of Massachusetts Amherst 📍 Massachusetts, USA
- **Biology Degree**
University of Buenos Aires 📍 Buenos Aires, ARG



RESEARCH EXPERIENCE

Current
|
2022

2021
|
2018

2018
|
2016

2015
|
2013

- **Graduate Research Assistant**
Massachusetts Institute of Technology 📍 Massachusetts, USA
 - Designed and built behavioral setup for synchronized behavior and physiology recordings
 - Designed experiments and collected terabyte datasets to study hunger, sleep, and torpor in mice
- **Technical Associate**
Massachusetts Institute of Technology 📍 Massachusetts, USA
 - Provided technical support for lab procedures (surgeries, wet lab, colony management)
 - Designed continuous home cage monitoring system for movement, temperature, and food intake
- **Graduate Research Assistant**
University of Massachusetts Amherst 📍 Massachusetts, USA
 - Designed experiments and collected data to study maternal behavior in rats
- **Undergraduate Researcher**
University of Buenos Aires 📍 Buenos Aires, ARG
 - Tested a novel device to measure escape responses in crabs
 - Designed experiments and collected data to study learning and memory mechanisms



SKILLS

- **Biological Domain Expertise**
Rodent behavior, thermoregulation, energy balance, neural circuits.
- **Experimental Design**
Skilled at evaluating scientific evidence, hypothesis generation and designing relevant experiments.
- **Quantitative Analysis**
R (tidyverse, GLMMs), Python (numpy/polars/pandas, scikit-learn), signal processing, time-series, behavioral analysis.



✉ matiasandina@gmail.com
🐦 NeuroMLA
🌐 github.com/matiasandina
🌐 matiasandina.com
in linkedin.com/in/matiasandina

🗉 LANGUAGES

Spanish (native)
English (bilingual)
Portuguese (intermediate)

</> PROGRAMMING

R
Python
Matlab
git / GitHub

📊 DATA ANALYSIS

Data visualization (ggplot2, seaborn)
Linear models (GLM, GLMM)
Machine Learning (sklearn)
Image Processing (opencv)

📖 LITERATE CODING

Quarto
Rmarkdown
LaTeX

- **Machine Learning**
Automated sleep/behavior state scoring with a custom ML pipeline. Achieved ~150x speedup per electrode (5h → 2min) and ~1500x throughput boost across multi-electrode sessions, enabling full-cohort analysis within minutes rather than days.
- **Experimental & Technical**
Rodent surgery (stereotaxic, abdominal), telemetry systems, sensor integration, open hardware design.
- **Tool-building**
R/Python package development and pipelines, documentation, reproducible workflows, Git/GitHub.
- **Project Management**
Managed multi-device experiments and analysis pipelines involving hundreds of mice per project. Mentored 10+ trainees.



SELECTED PUBLICATIONS

- 2025 ● **IL-1R1-positive dorsal raphe neurons drive self-imposed social withdrawal in sickness**
Cell [🔗 https://doi.org/10.1016/j.cell.2025.10.040](https://doi.org/10.1016/j.cell.2025.10.040)
• L Yang, ML Andina, M Witkowski, H King, I Wickersham, JR Huh, GB Choi
 - 2021 ● **Two spaced training trials induce associative ERK-dependent long term memory in *Neohelice granulata*.**
Behavioral Brain Research. [🔗 https://doi.org/10.1016/j.bbr.2021.113132](https://doi.org/10.1016/j.bbr.2021.113132)
• Ojea Ramos S., Andina M., Romano A., Feld, M
 - 2020 ● **Interleukin-17a restores sociability in several mouse models for neurodevelopmental disorders.**
Nature. [🔗 https://doi.org/10.1038/s41586-019-1843-6](https://doi.org/10.1038/s41586-019-1843-6)
• Reed M.D., Yim Y.S., (...), Andina M., (...), Huh J.R., Choi G.B.
- Complete publication list at [🔗 Google Scholar](#).



TEACHING EXPERIENCE

- 2022 ● **Teaching Assistant: Statistics for Brain and Computer Sciences**
Massachusetts Institute of Technology [📍 Massachusetts, USA](#)
• Taught statistics recitation lectures.
- 2018 ● **Teaching Assistant: Methods of Inquiry in Psychology**
University of Massachusetts Amherst [📍 Massachusetts, USA](#)
• Taught statistics recitation lectures.
- 2017 ● **Instructor of Record: Animal Behavior**
University of Massachusetts Amherst [📍 Massachusetts, USA](#)
• Selected topics in animal behavior and designed curriculum.
• Taught weekly seminars in animal behavior for 40 students
• CITRL associate



SELECTED CONFERENCES

- 2025 ● **IL-1R1-positive dorsal raphe neurons drive self-imposed social withdrawal in sickness**
Society For Neuroscience
• L Yang, ML Andina, M Witkowski, H King, I Wickersham, JR Huh, GB Choi
- 2019 ● **Interleukin-17a restores sociability in several mouse models for neurodevelopmental disorders.**
Society For Neuroscience
• Reed M.D., Yim Y.S., (...), Andina M., (...), Huh J.R., Choi G.B
- 2018 ● **Long-term memory induced by two training trials in the crab *Neohelice granulata***
Federation of European Neuroscience Societies
• Ojea Ramos S., Andina M., Feld M
- 2015 ● **Two-trial long-term memory in the crab *Neohelice granulata***
Argentinean Society of Neuroscience Research
• Andina M., Romano A., Feld M
- 2013 ● **Measuring crab's memory: improving conditioning**
Argentinean Society of Neuroscience Research
• Andina M., (...), Romano A., Feld M.

Complete conference list in [🔗 this archive](#).



SELECTED AWARDS

- 2024
|
2022 ● **Picower Neurological Disorder Research Fund**
Massachusetts Institute of Technology
• Secured \$75,000 to lead a collaborative research effort
- 2021 ● **Arete Fellowship**
Massachusetts Institute of Technology
• Participated on weekly seminars in Effective Altruism discussion panel
- 2021 ● **IBRO-LARC**
Talleres Open Source
• Secured \$5,000 to organize open-hardware workshop in Latin America. [🔗 https://tallerneurolatam.netlify.app/](https://tallerneurolatam.netlify.app/)
- 2021 ● **Presidential Fellowship**
Massachusetts Institute of Technology
• Secured \$43,000 to fund my PhD research
- 2017 ● **College of Natural Sciences Fellowship**
University of Massachusetts Amherst
• Awarded fellowship to design and teach a first year seminar class
- 2016 ● **Neuroscience and Behavior Program Fellowship**
University of Massachusetts Amherst
• Secured \$27,000 to fund my MSc research

2015



Young ISN Neurochemistry

University of Buenos Aires

- Secured travel funding to present my Undergraduate Research at a conference

Complete award list in [🔗 this archive](#).



MENTORING

2025



Matthew Alkire

Massachusetts Institute of Technology

- Stereotaxic and abdominal surgery. Experimental design.

2025



Jenna Raffael

Massachusetts Institute of Technology

- Stereotaxic and abdominal surgery. Basic laboratory techniques in rodents.

2022

|

2021



Penelope Herrero

Massachusetts Institute of Technology

- Open Hardware design and fabrication

2021



John Eastman

Massachusetts Institute of Technology

- FedWatcher. Open Software & Hardware design and fabrication

2018

|

2017



Idil Tuncali

University of Massachusetts Amherst

- Statistics, R programming, and Analysis of Ultrasonic Vocalizations

2017



Nneka Southwell

University of Massachusetts Amherst

- Basic laboratory techniques in rodents



SELECTED TALKS & INVITED LECTURES

2021



Building a user-driven database of open neuroscience projects

Organisation for Human Brain Mapping

- [🔗 bit.ly/OHBM-21-MLA](https://bit.ly/OHBM-21-MLA)

2019



Data Visualization

Harvard Philanthropy Advisory Fellowship

📍 Massachusetts, USA

- [🔗 bit.ly/PAF-2019-MLA](https://bit.ly/PAF-2019-MLA)



SERVICE

2023

|

2020



Team member

Open Neuroscience

- Repository of open-source neuroscience tools
- [🔗 https://open-neuroscience.com/](https://open-neuroscience.com/)

- 2021
|
2020
 - **Co-founder and team member**
Talleres Open Source
 - Organization of workshops for Open Source tools in Neuroscience.
 - @ <https://talleresos.netlify.app/>
- 2018
|
2016
 - **NSB Seminar Committee**
University of Massachusetts Amherst
 - Organization of invited Faculty weekly talks
- 2018
|
2017
 - **NSB Mentoring Committee.**
University of Massachusetts Amherst
 - Organization of first year graduate student activities and mentoring events



SOFTWARE DEVELOPMENT

- **FedWatcher**
Open-source Python tool enabling real-time closed-loop communication with FED3 behavioral devices. Used to automate feeding, fasting, and stimulus-delivery paradigms in rodent experiments. @ <https://github.com/matiasandina/FEDWatcher>
- **uid**
R package for preprocessing, cleaning, and analyzing high-resolution telemetry data (temperature, activity) from rodent monitoring systems. Includes data QC, interpolation, artifact removal, and downsampling. @ <https://github.com/matiasandina/uid>
- **nobrainr**
R package providing fast visualization tools for Mouse Allen Brain Atlas plate drawing, useful for figure preparation and exploratory analysis. @ <https://github.com/matiasandina/nobrainr>

Complete List of Software at [Github](#).

I have a strong commitment towards using and developing open source tools.



SELECTED DATA SCIENCE WRITING

- 2020
 - **Queen's Gambit**
@ <https://matiasandina.com/posts/2021-02-07-queens-gambit/>
- 2019
 - **Birthday Meritocracy**
@ <https://matiasandina.com/posts/2019-05-09-birthday-meritocracy/>

I love to visualize data. I post my visualizations and insights in my personal blog⁷