TOMÁS D'AMELIO

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EDUCATION

2020 – 2021	**Master's Degree in Cognitive Science (M2)**	**École Normale Supérieure (ENS)**

GPA: 16.18 / 20
Main courses from *Cognitive Science* and *Cognitive Engineering* tracks:
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Robotics and cognitive science  /  Augmented Cognition  /  Visual perception  /
Cognitive neuroscience of consciousness  /  Behavioral and Neuronal Economics  /
Psychology and Public Policy
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1-year program

2019	**Master's Degree in Data Mining and Knowledge Discovery (M1)**	**University of Buenos Aires (UBA)**

GPA: 8.83 / 10
Main courses:
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Machine learning  /  Time Series  /  Neural Networks  /  Data visualization  /  Text
Mining  /  Data Mining in Science and Technology  /  Data Mining in Economics and
Finance
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1-year program

2013 – 2018	**Bachelor's Degree in Psychology**	**University of Buenos Aires (UBA)**

GPA: 9.06 / 10
Six-month stay as an exchange student at the University of Barcelona (UB), Spain
6-year program

2013 – 2016	**Bachelor's Degree in Advertising**	**University of Business and Social Sciences (UCES)**

GPA: 9.13 / 10
Awarded as best 'Final year project'.
4-year program

EXPERIENCE

4/2022 –	**Graduate Research Assistant**	**COCUCO Lab**

- Bridging affective computing and neuroscience, focusing on the temporal dynamics of affective states through predictive modeling.
- Using EEG, electrodermal activity (EDA), and electromyography (EMG) to explore the relationship between emotional processes and neurobiology.

Supervised by Drs. Enzo Tagliazucchi and Denis Engemann

2021 – part time	**Neuro Data Scientist**	**Purple Gaze, Amsterdam**

- Developed a specialized data analysis pipeline tailored to eye-tracking data, enhancing researchers' ability to extract complex insights from eye movement patterns.
- Responsible for aligning Purple Gaze's eye-tracking software and hardware capabilities with the company's mission to advance brain research and identify markers for neurological disorders.
- Led the conceptualization and design of novel experimental protocols aimed at detecting markers for neurodevelopmental and neurodegenerative disorders, maximizing the potential of eye-tracking technology.

3/2021 –
part time

Director - Diploma in Cognitive Neuroscience and Experimental Psychology   **UAI, Buenos Aires**

- Lead a teaching staff of 20 instructors (PhDs, MScs and BAs).

- Coordinate training in cognitive neuroscience methods: fMRI, TMS, electrodermal activity, HRV, EMG, eye-tracking, and neural recording methods in animal models.

- Focus on data science: provide Python and R tools for data analysis of various psychophysiological methods, and ensure the use of appropriate statistical methods (e.g., frequentist statistics and machine learning).

3/2019 –
part time

Assistant Lecturer - Neurophysiology   **University of Buenos Aires (UBA)**

- Instruct undergraduate courses in neural physiology, neuroanatomy, and psychopharmacology, covering key cognitive functions such as emotion and memory.

- Teach approximately 70 students per semester.

- Design and administer exams; conduct hands-on activities such as brain dissections and action potential simulations.

3/2019 –
part time

Bachelor Thesis Supervisor   **University of Buenos Aires (UBA)**
Directed and mentored over 10 undergraduate students in the development of interdisciplinary research projects within the Psychology program, with a focus on affective computing

9/2020 – 9/2021

Research intern   **INRIA, Paris**
Manager and main developer of the project:
Prediction of affective states in EEG and skin conductance databases
(see GitHub)

- Introduced a novel methodology for predictive modeling of affective states, particularly arousal, from EEG signals, focusing on the use of spatial filters for dimensionality reduction and enhanced understanding of arousal sources.

- Implemented a regression pipeline to predict electrodermal and electromyographic activity at the event level from EEG data.

Supervised by Dr. Denis A. Engemann.

3/2019 – 9/2019
part time

Assistant Lecturer - Neuroscience III   **Universidad del Salvador**
Taught undergraduate courses in cognitive neuroscience topics that include: *attention, consciousness, emotions, learning and memory*

2/2018 — 9/2019
part time

Research Assistant   **Behavioral Biology Lab (IByME - CONICET)**
Involved in data collection for psychophysiological (electrodermal activity) and central (EEG) measures, primarily studying affective states and consciousness. My responsibilities included designing and programming laboratory experiments, conducting literature reviews, and disseminating research findings through posters and articles.

3/2018 – 12/2018
part time

Teaching Assistant - Psychophysiological Methods   **University of Buenos Aires (UBA)**

- Taught undergraduate courses in experimental design, statistics, EEG, and electrodermal activity.

- Developed comprehensive course materials, including laboratory experiments, lectures, presentations, and practical exercises.

9/2017 — 1/2018

Research Assistant   **Institute of Neurosciences, University of Barcelona (UB)**

- Initiated a study validating an eye-tracking game for ADHD and dyslexia, enhancing attention processes.

- Directly involved in game evaluation, behavioral measures, and neuropsychological testing.

- Contributed to a publication demonstrating the effectiveness of eye-tracking technology in clinical applications for ADHD and dyslexia.

Supervised by Dr. Hans Supèr

- Assisted in the project "Contextual Control of Learning Concepts: Neural Network Model and Human Experiments".

- Engaged in academic research, including the design of experiments.

- Collected, cleaned, and analyzed psychophysiological and behavioral data.

Supervised by Dr. Alberto Andrés Iorio.

PUBLICATIONS

D'Amelio, T. A., Galán, L. A., Maldonado, E. A., Díaz Barquinero, A. A., Tagliazucchi, E., Engemann D.A. (2023). Exploring the underlying emotional models in emotion recognition systems with electrodermal activity. PsyArXiv. [Preprint]

D'Amelio, T. A, Bruno, N. M., Bugnon, L., Zamberlan, F., Tagliazucchi, E. (2023) *Affective computing as a tool for understanding emotion dynamics from physiology: a predictive modeling study of arousal and valence*. In 2023 11th International Conference on Affective Computing and Intelligent Interaction Workshops and Demos (ACIIW).

Muller, S., Cavanna, F., de la Fuente, L. A., Bruno, N., **D'Amelio, T.A.**, Pallavicini, C., Tagliazucchi, E. (2023). Acute effects of psilocybin on the dynamics of gaze fixations during visual aesthetic perception. bioRxiv, 2023-10.

Paz, G. O., Bronzuoli Gallicchio, M. L., Correa Freisztav, M., **D'Amelio, T. A** (2023). Flow state as a performance measure in Esports. PsyArXiv. [Preprint].

Bruno, N. M., Embon, I., Rivera, M. N. D., Giménez, L., **D'Amelio, T. A**, Batán, S. T., … Andreau, J. M. (2020). Faster might not be better: Pictures may not elicit a stronger unconscious priming effect than words when modulated by semantic similarity. *Consciousness and Cognition, 81*, 102932.

García-Baos, A., **D'Amelio, T. A.**, Oliveira, I., Collins, P., Echevarria, C., Zapata, L. P., … Supèr, H. (2019). Novel Interactive Eye-Tracking Game for Training Attention in Children With Attention Deficit/Hyperactivity Disorder. *The primary care companion for CNS disorders, 21*(4).

Idesis, S. A., **D'Amelio, T. A.**, Batán, S. T., Menendez, J., Polti, I. (2018). Electrodermal and behavioral response to emotional Spanish words in native speakers. *Revista Argentina de Ciencias del Comportamiento (RACC), 10*(1), 43-54.

CONFERENCE PRESENTATIONS

Maldonado, E. A., Galán, L. A., Diaz Barquinero, A. A. **D'Amelio, T.A.** (2023, March). *Affective and Computational Perspectives of Automatic Emotion Recognition using Electrodermal Activity: A Systematic Review*. KHIPU Latin American Conference in Artificial Intelligence, Montevideo, Uruguay.

Collaborator in the workshop: **Introduction to R for Psychologists**. *XIII International Congress of Research and Professional Practice in Psychology*. November 2021.

D'Amelio, T. A, Galán, L., Diaz, A., Maldonado, E. (2021, November). *Affective state recognition from electrodermal activity: a systematic review and meta-analysis*. XIII International Congress of Research and Professional Practice in Psychology, Buenos Aires, Argentina.

D'Amelio, T. A, Salamone, P. (2021, November). *Loneliness and life satisfaction in times of social isolation*. XIII International Congress of Research and Professional Practice in Psychology, Buenos Aires, Argentina.

Collaborator in the workshop: **Introduction to Python for Psychologists**. *XII International Congress of Research and Professional Practice in Psychology*. November 2020.

Paz, G. O., **D'Amelio, T. A**, Bronzuoli Gallicchio, M. L. Correa Freisztav, M. (2020, November). *Flow state in eSports.* XII International Congress of Research and Professional Practice in Psychology, Buenos Aires, Argentina.

Canziani, V. , **D'Amelio, T. A**, Fornasier, C. (2019, November). *). It's better with ranks! A comparative study of ordinal and dimensional measures of affective states in individuals with ASD* XI International Congress of Research and Professional Practice in Psychology, Buenos Aires, Argentina.

Collaborator in the workshop: **@Neurotransmitiendo: how to communicate about scientific psychology and neurosciences in 2200 characters**. *XI International Congress of Research and Professional Practice in Psychology*. November

2019.

Andreau, J.M., Iorio, A., Embon, I., Bruno, N.M., **D'Amelio, T.A.**, Diaz Rivera, M. (2019, November). *Semantic processing in Masked Priming: An EEG study*. XI International Congress of Research and Professional Practice in Psychology, Buenos Aires, Argentina.

D'Amelio, T.A. Iorio, A.(2019, November). *Automatic emotion recognition from psychophysiological data: a preliminary bilateral electrodermal activity study*. KHIPU Latin American Conference in Artificial Intelligence, Montevideo, Uruguay.

Coordinator in the workshop: **"How to do an experiment in Neurosciences? Introduction to psychophysiological methods"**. *X International Congress of Research and Professional Practice in Psychology*. November 2018.

D'Amelio, T.A., Canziani, V, Collia, M. (2018, November). *Emotions and lateralization of the Nervous System: a bilateral electrodermal activity study*. X International Congress of Research and Professional Practice in Psychology, Buenos Aires, Argentina.

Santillán, M.J., **D'Amelio, T.A.**. Menendez, J.(2017, November). *Emotion displacement: electrophysiological results about function transformation phenomenon*. IX International Congress of Research and Professional Practice in Psychology, Buenos Aires, Argentina.

Cremades, C. **D'Amelio, T.A.** (2017, November). *Does ilex paraguariensis improve memory? Effects on electrodermal activity and memory performance*. IX International Congress of Research and Professional Practice in Psychology, Buenos Aires, Argentina.

Collaborator in the workshop: **"How to do an experiment in Neurosciences? Introduction to psychophysiological methods"**. *IX International Congress of Research and Professional Practice in Psychology*. November 2017

D'Amelio, T.A., Bruno, N. M. Andreau, J.M. (2016, November). *Hemispheric specialization of emotional processing: a study with bilateral RGP*. VIII International Congress of Research and Professional Practice in Psychology, Buenos Aires, Argentina.

D'Amelio T.A., Idesis, S. (2016, September). *Exploring the relationship between personality, anxiety and physiological activation*. XVIII Argentinian Congress of Neuropsychiatry and Cognitive Neuroscience, organized by the Argentinian Association of Neuropsychiatry.

Collaborator in the workshop **"Measuring the emotional response: Introduction to the measurement of skin conductance"**. *VIII International Congress of Research and Professional Practice in Psychology in the School of Psychology of the University of Buenos Aires*. November 2016

Organizer of the **"II Conference for Undergraduate Research in Psychology"**. *Universidad Abierta Interamericana (UAI)*. November 2015

D'Amelio T.A., Idesis S., Sanchez, F, Iorio, A.A, (2015, June) *"Emotional response to words in Spanish: a study of RGP"*. World Congress on Brain, Behavior and Emotions, Buenos Aires, Argentina.

ADDITIONAL COURSES

Attended and approved the **"Spatial Filtering Techniques for Electroencephalography Signals"** course, a preconference course of the Argentine Society of Neuroscience. Professor: Dr. Victoria Peterson. Universidad Nacional del Litoral. October 2023

Teaching Assistant for the **"NeuroMatch Academy: Computational Neuroscience"** course, where I mentored students on topics like machine learning, dynamical systems, and stochastic processes, with a focus on their applications in neuroscience. Supervised three projects leveraging machine learning to establish correlations between cognitive states and neural signals from EEG and ECoG, facilitating students' practical experience with supervised and unsupervised models for neural data interpretation. NeuroMatch Academy. July 2023.

Participation as a guest lecturer in the course "Cognitive Neuroscience" during the **"Physiological feelings"** class. School of Psychology (University of Buenos Aires). August - October 2022.

Participation as organizer and lecturer in the course **"Emotions and Electrodermal Activity"**. School of Psychology (University of Buenos Aires). April - July 2022.

Summer school "Neuromatch Academy: Computational Neuroscience". Completion of the interactive track and the course project. Title of the project: "Global and local functional connectivity properties: a reward predictive model approach". See GitHub. July 2022.

Summer school "Neurohackademy 2021". University of Washington eScience Institute. July 2021.
Completion of the interactive track and the course project. Title of the project: "Feature Encoding". See GitHub.

Introduction to Cognitive and Computational Neuroscience - Professor: Dr. Diego Fernandez Slezak. Faculty of Exact and Natural Sciences (FCEN - UBA). Period: July 2018 - December 2018

Principles of the technique of magnetic resonance imaging (MRI) and its application in the neurosciences - Faculty of Exact and Natural Sciences (FCEN - UBA). Professor: Dr. Jorge Armony (McGill University). August 2018

Computational Methods for Understanding Language in the Brain. School of Exact and Natural Sciences (FCEN - UBA). Professor: Dr. Liberty Hamilton (University of Texas at Austin). July 2018

Applications of Event-related potential and Electroencephalography in Cognitive Neuroscience - Institute of Biology and Experimental Medicine. September 2016

Brainstem and Cerebellum and **Basal Ganglia and Diencephalon** modules of the **"Structural and Functional Neuroanatomy"** Course - III Chair Department of Normal Anatomy, School of Medicine, University of Buenos Aires and the Neuroanatomy Lab, Hospital de Clínicas "José de San Martín". June 2016

Introduction to the large scale analysis of electrophysiological activity of the brain (30 hours) - Department of Physics of the School of Exact and Natural Sciences (FCEN-UBA). Professor: Dr. Jacobo Sitt. November 2015

Introduction to practical statistics for psychological research - Association for the Advancement of Psychological Science (AACP). Professor: Dr. Lucas Cuenya. November 2015

PROGRAMMING SKILLS AND LANGUAGES

Python

R

Linux

Git

LaTeX

Spanish - native (C2)
English - proficient (IELTS C1)
Italian - proficient (Esame di Stato - C1)

HONORS AND AWARDS

Chen Science Writer at ACII 2023 (MIT Media Lab). Tianqiao and Chrissy Chen Institute (TCCI). July 2023.
As the recipient of this award, I was required to write a report on controversies and challenges relevant to the field of affective computing that will be addressed at ACII 2023 (MIT Media Lab).

3rd place winner of the **Emotion Physiology and Experience Collaboration's (EPiC) 2023 Challenge**. Stanford University. June 2023
14 international and interdisciplinary teams were selected to participate in this competition to predict moment-to-moment emotions based on physiological signals (e.g. electrodermal activity). The results were presented for the first time at the EPiC workshop at ACII 2023 at the MIT Media Lab.

Winner of the **Science Abroad Program 2023**. University of Buenos Aires. June 2023.

Winner of a **scholarship to assist to "Khipu" (Latin American Meeting In Artificial Intelligence)**. Universidad de la Republica, Uruguay. March 2023.

Winner of the **"Ciencia por Contar" scholarship**. Ministry of Science and Technology, Presidency of the Argentine Nation. December 2022.

Winner of a **scholarship to attend to "Khipu" (Latin American Meeting In Artificial Intelligence)**. Universidad de la Republica, Uruguay. November 2019.

Winner of the **scholarship for an academic stay at the University of Barcelona** as visiting teacher selected by the University of Buenos Aires. June 2019,

Honors Diploma of Psychology. University of Buenos Aires. December 2018.

2017 Outstanding Student Award. University of Buenos Aires. December 2018.

Winner of the **Science and Technology University of Buenos Aires (UBACyT) Research Fellowship**. September 2018.

Winner of the **National Interuniversity Council (CIN) Research Fellowship.** November 2017.

Winner of a **full scholarship to attend a semester at the University of Barcelona** as exchange student (Ibero-America - University of Barcelona). 1st place due to academic merit - University of Buenos Aires. May 2017

SCIENCE COMMUNICATION AND COMMUNITY BUILDING

Community Builder at Association for the Advancement of Affective Computing (AAAC)
In collaboration with Dr. Mohammad Soleymani, relaunched the AAAC's Slack community to foster interactive dialogue among affective computing researchers and professionals.

Co-founder of Neurotransmitiendo, an Argentinean NGO dedicated to public communication and teaching of neuroscience and psychology in Argentina with a +20k community.
Responsibilities at Neurotransmitiendo:

· Designed and executed innovative communications strategies that fostered the growth of our community, while ensuring our content was engaging and understandable.

· Served as a key member of the Neurotransmitiendo science podcast team as an interviewer and producer.

· Fostered strategic partnerships and collaborations with other organizations to amplify our impact and expand the reach of our educational content.

Co-founder and team leader of NeuroTechX Buenos Aires, a local chapter of the world's largest non-profit neurotechnology community, NeuroTechX. Our mission is to advance neurotechnology by integrating artificial intelligence (AI) with neuroscience for technology development.
Key contributions and accomplishments at NeuroTechX Buenos Aires:

· Organized nine seminars on computational neuroscience.

· Conducted workshops on AI and neuroscience at national and international conferences.

· Hosted two meetups with founders and researchers from the neurotech ecosystem, focusing on the use of AI in neurotechnology advancements.

· Participated in events such as the AI Litoral 2023 conference, demonstrating our commitment to advancing neurotech knowledge in the region.

· Led the Buenos Aires chapter in a two-day hybrid hackathon organized by NeuroTechX global, attracting 30 in-person participants.

· Grown the NeuroTechX Buenos Aires community to over 200 active members on our Slack channel, creating a dynamic platform for discussion, collaboration, and knowledge sharing in the field of neurotechnology.

MEMBERSHIPS

Association for the Advancement of Affective Computing (AAAC). May 2023

Asociación Argentina de Ciencias del Comportamiento. January 2020

REFERENCES

Dr. Enzo Tagliazucchi (enzo@df.uba.ar)
Dr. Denis A. Engemann (denis.engemann@roche.com)
Dr. Nicholas Coles (ncoles@stanford.edu)
Dr. Stanisław Saganowski (stanislaw.saganowski@pwr.edu.pl)
Dr. Hans Supèr (hans.super@icrea.cat)