

Matías Alloatti

📍 La Rioja 795 - 6C
Buenos Aires, Argentina
📞 +54 9 11 2182 9783
✉ matiasalloatti@gmail.com
🌐 /webpage/
in [matias-alloatti-966b8216a](https://matias-alloatti-966b8216a.github.io)
🐙 github.com/MatiAlloatti



Young and passionate neuroscientist wading into data science to experience new challenging environments, exploit my creativity and help developing new technologies, products and services.

DATA SCIENCE SKILLS:

- **Python and Matlab/Octave:** My main languages for data exploration, visualization, statistics, hypothesis formulation and machine learning prototyping.
- **Data Science frameworks:** numpy, scipy, pandas, matplotlib, PyTorch, fastai, scikit learn. I have some experience using R for a few specific applications.
- **Reporting:** matplotlib, Matlab, markdown, L^AT_EX, GraphPad prism, Calc/Excel, GIMP/Adobe photoshop, jupyter notebooks, Google Colab.
- **Cloud computing:** Paperspace Gradient.
- **Databases:** SQL language. SQLite and MySQL systems.
- **Version control and project management:** Git, Github, and Trello.
- **Operative Systems:** linux, windows.
- **Computer Vision:** classification and image segmentation using ImageJ, Matlab and fastai (using CNNs and transfer learning).
- **Experience in:** NLP using RNNs (with PyTorch), Anomaly detection using Gaussian Mixture Models, Clustering with K-means, Recommender systems using collaborative filtering, dimensionality reduction and other applications using PCA, ICA and SVD, SVM and for classification. Backpropagation, batch, mini-batch and stochastic GD.
- **Other Skills:** I've vast experience working in multidisciplinary environments. I'm a strong autodidact and self-directed scientist, with effective communication. I'm empathic and social with active listening and persuasive speaking skills, I'm a very good problem solver and analytical thinker. I also thrive in a team environment contributing with my expertise and following leadership.

WORK EXPERIENCE:

2014–present **PhD Thesis**, *Cell Biology and Neuroscience Institute. Prof. Eduardo De Robertis*, School of Medicine - UBA, Buenos Aires, Argentina.

In my PhD I implemented complex algorithms to model protein behaviour in cells and to analyze microscopy images. I acquired experience in python and fully exploited my Matlab skills obtaining two first-author publications and many more as co-author. During this time I worked really hard not only to develop new technologies and publications but also to quickly obtain a plethora of knowledge, to learn to communicate lab's results to anyone, to adapt to extremely diverse and challenging environments, and also to train new lab members.

2015–2016 **Laboratory Internship at I'Dor Institute**, *Rio de Janeiro*, Brazil.

Here, I managed to make my projects grow in a challenging environment, I learned new technologies by myself, managed people and reported results in a new foreign language (portuguese). I also learned how to culture human brain tissue using pluripotent Stem Cells.

2012–2014 **BS Thesis**, *Cell Biology and Neuroscience Institute. Prof. Eduardo De Robertis, School of Medicine - UBA, Buenos Aires, Argentina.*

During my BS Thesis I gained a lot of experience working with people from across all areas, I learned how to use Matlab, reporting results and writing publications, and fundamentally I learned the commitment that a large project demands. My BS thesis results were fundamental to publish my first paper as co-author.

MAIN ACHIEVEMENTS IN ACADEMIA:

- Development of an **algorithm for single-particle tracking** for axonal transport images with Matlab.
- Characterization of the **proteasome complex movement** in axons of mammal neurons.
- Obtaining the **first human cerebral organoids in Argentina**, a cutting edge model.
- Development of a **human three-dimensional model of Alzheimer's Disease pathology** with cultured brain tissue, global pioneer biological model.
- Characterization of the **effects of changes in alternative splicing of Tau protein** in axonal transport of amyloid precursor protein (both key proteins in Alzheimer's Disease).

EDUCATION:

2014 – 2020 **PhD in Neuroscience**, *University of Buenos Aires (UBA), Argentina*, thesis defense will be on April.

2007 – 2014 **Bachelor of Science in Genetics**, *National University of Misiones (UNaM), Argentina.*

LANGUAGES:

Spanish Native

Mother Tongue

English Excellent skills

B2 / FCE - Cambridge English

Portuguese Intermediate

Learned during lab internship in Brazil

Italian Basic skills

1st level on Italian language and culture - COELI

SELECTED PUBLICATIONS AND WORKING PROJECTS:

- Methods for Quantitative Analysis of Axonal Cargo Transport. M Alloatti, et al. *Methods in Molecular Biology*, 2018. – 1st author –
- Tau Isoforms Imbalance Impairs the Axonal Transport of the Amyloid Precursor Protein in Human Neurons. V Lacovich*, SL Espindola*, M Alloatti*, et al. *Journal of Neuroscience*, 2017. – shared 1st author –
- Fast axonal transport of the proteasome complex depends on membrane interaction and molecular motor function. MG Otero, M Alloatti, et al. *Journal of Cell Science*, 2014. – 2nd author –

Complete list of publications at indexed journals here:

<https://www.ncbi.nlm.nih.gov/pubmed/?term=alloatti+Mat%C3%ADas>

Working Projects:

- Human cerebral organoids model Swedish Variant of Alzheimer's Disease. M Holubiec*, M Alloatti*, et al. – shared 1st author –
- Kinesin-1-mediated axonal transport of CB1 receptors is required for cannabinoid-dependent axonal growth and guidance. TM Saez, I Fernández, S Rodríguez, M Alloatti et al. – 4th author – (Under Revision)

AWARDS:

- 2019 **FENS SfN School Estipend**, *FENS / SfN*, Training topic: Brain-Machine Interfaces *Bertinoro - Italy*.
- 2014 - 2019 **PhD Fellowship**, *CONICET*, PhD Fellowship - *Buenos Aires - Argentina*.
- 2015 **LARC Short Stay Application Decision**, *IBRO*, Research topic: Human Cerebral Organoids *Rio de Janeiro - Brazil*.

SELECTED FURTHER EDUCATION:

- 2019 **Machine Learning**, Andrew Ng, PhD, *Stanford Online - Coursera*.
- 2019 **Brain Reading and Writing: new perspectives of neurotechnology**, P Roelfsema, PhD & A Schwartz, PhD, *SfN / FENS. Bertinoro, Italy*.
- 2019 **Natural Language Processing with Neural Networks**, G Kruszewski, PhD, *Facebook Ai, Schools of Informatic Sciences, UBA. Buenos Aires, Argentina*.
- 2018 **Neural Networks**, E Segura, PhD, *School of Exact Sciences, UBA. Buenos Aires, Argentina*.
- 2018 **Past, Present and Beyond Synaptic Transmission**, O Uchitel, PhD, *INIMEC / UNC. Córdoba, Argentina*.
- 2018 **Integrated Neurobiology of Central Nervous System**, AJ Ramos, PhD, *School of Biochemistry and Farmacy, UBA. Buenos Aires, Argentina*.
- 2017 **Clasification of cerebral states using functional neuroimages**, E Tagliazucchi, PhD, *Schools of Informatic Sciences, UBA. Buenos Aires, Argentina*.
- 2017 **Machine Learning for analyzing neuroimaging data from natural stimulus experiments**, A Huth, PhD, *Schools of Informatic Sciences, UBA. Buenos Aires, Argentina*.

TEACHING EXPERIENCE:

- 2015, 2016 & 2018 **Teacher and organizer of undergraduate university course: "Cell Biology Techniques"**, *UNaM, Argentina*.
- 2008-2009 **Assistant Teacher of Organic Chemistry**, *UNaM, Argentina*.
- 2019 **High School Teacher of Chemistry and Biology**, *Instituto Susini, Buenos Aires, Argentina*.

CONTACTS FOR REFERENCES:

- Tomás Falzone, PhD** He is the head of the Axonal Transport lab at the Cell Biology and Neuroscience Institute (School of Medicine - UBA) and he was my PhD thesis director. I am currently collaborating with Tomás' Lab to publish further papers.
Email: tfalzone@fmed.uba.ar
More information about Tomás' work can be found at:
tomas web
- Luciana Bruno, PhD** Luciana is a researcher at the Calculus Institute (School of Exact Sciences - UBA) and she was my co-director during my BS thesis. The nice interaction between us continued and allowed us to publish many interesting papers.
Email: lbruno@df.uba.ar
More information about Luciana's work can be found at:
luciana web