Matías Alloatti

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Curious and passionate neuroscientist wading into data science to experience new challenging environments, produce creative solutions and help developing new technologies, products and services.

DATA SCIENCE SKILLS:

- **Python and Matlab/Octave**: Main languages for data exploration, visualization, statistics, hypothesis formulation and machine learning prototyping.
- **Data Science frameworks**: numpy, scipy, pandas, matplotlib, PyTorch, fastai, scikit-learn. Some experience using R for a few specific applications.
- **Reporting**: jupyter notebooks, matplotlib, Matlab, markdown, LaTeX, GraphPad prism, Calc/Excel, GIMP/Adobe photoshop.
- **Cloud frameworks and tools**: Paperspace Gradient, Google Colab, Kaggle kernels.
- **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, ImageJ, Matlab and fastai (using CNNs and transfer learning).
- **Experience in**: NLP using RNNs, Anomaly detection using Gaussian Mixture Models, Clustering, Recommender systems using collaborative filtering, dimensionality reduction (PCA, ICA and SVD), SVM for classification. Backpropagation, batch, mini-batch and stochastic GD.
- **Other Skills**: Extensive experience working in multidisciplinary environments. Strong autodidact and self-directed scientist, with effective communication. Empathic and social with active listening and persuasive speaking skills. Very good problem solver and analytical thinker. Thrive in a team environment contributing with 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 through a newly developed tracking system which follows the movement of single vesicles in human neurons. I acquired experience in python and fully exploited my Matlab skills obtaining two first-author publications and many more as co-author. During that time I developed an in-vitro model of Alzheimer Disease using human tissue obtained from pluripotent stem cells. I not only worked a lot to communicate my data and publish it in good peer reviewed journals but also to quickly obtain a plethora of knowledge and 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 in teams with people from all kinds of backgrounds including computer scientists, physicians, physicists, biologists and biochemists, to whom I had to communicate my results. I gained good experience with Matlab, reporting results and writing publications, and fundamentally I learned the commitment that a large project demands. My BS thesis results were key to publish my first paper as co-author where I characterized how the proteasome complex moves in axons of mammal neurons.

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 Rodrígez, M Alloatti et al. – 4th author – (Under Revision)

AWARDS:

2019 **FENS SfN School Estipend**, *FENS / SfN*, Training topic: Brain-Machine Interfases *Bertinoro - Italy.*

2014 - 2019 **PhD Fellowship**, *CONICET*, *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 **Classification 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:
Axonal Transport Lab Website

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's Website

Sergio Villordo, PhD Sergio is a bright data scientist that not only has experience in both academia and industry but also succeeded in every environment he has been exposed to. He can provide further information on my person and I strongly encourage to follow his projects and career.
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More information about Sergio can be found at:
Sergio's Linkedin