

## Positions

- Jun 2019– **Quantitative Researcher**, Lydian Capital, Buenos Aires.  
Mar 2019– **Data Scientist**, Globant, Buenos Aires.  
Jun 2019  
Apr 2014 – **Research Assistant**, Instituto de Investigación en Biomedicina CONICET – Partner Institute  
Mar 2019 of the Max Planck Society, Buenos Aires.

## Selected Projects

**MarsGAN**, a StyleGAN to produce synthetic images of Mars's Surface. , [keras](#), [architecture tuning](#), [hyperparameter optimization](#).

**Cajal**, a neural network architecture and hyperparameter keras explorer, *in progress* , [keras](#), [architecture tuning](#), [hyperparameter optimization](#).

**Somite masker**, a CNN to perform instance segmentation of somites in embryonic development videos using a small training dataset and data augmentation, *in progress*, [deep learning](#), [CNNs](#), [instance segmentation](#).

**Quantification of precision of oscillations**, a new method to compute the quality factor based on period statistics which outperforms current methods by 50% in short time series, *ready to submit*.

**Cryptocurrencies trading bot**, a real time algorithmic trading bot using DNNs, [machine learning](#), [DNNs](#), [python](#), [features engineering](#), [forecasting](#), [algorithmic trading](#), [technical analysis](#), [quantitative analysis](#), [cryptocurrencies](#).

## Research and Education

- 2014–2018 **Ph.D in Physics**, Universidad de Buenos Aires, Argentina, Qualification: Outstanding.  
Oscillations and noise in gene expression: a dialogue between theory and experiments  
2016 **Visiting Scientist**, Max Planck Institute for the Physics of Complex Systems, Dresden, Germany.  
2012–2013 **M.S. in Physics**, Universidad de Buenos Aires, Argentina, Qualification: Outstanding.  
Setting the time of the segmentation clock: gene regulation and new transgenic lines  
2011 **Undergraduate Student**, Integrative Neuroscience Lab, UBA, Argentina.  
Supervisor: Dr. Mariano Sigman

## Publications

- 2019 I. M. Lengyel, J. Negrete Jr., F. Jülicher, and L. G. Morelli, Temporal precision of short oscillatory time series, *In prep*, [Stochastic Processes](#), [New and Robust Estimator](#), [Time Series Analysis](#), [Theory](#).

- I. M. Lengyel, J. Negrete Jr., F. Jülicher, and L. G. Morelli, Defining temporal precision in the presence of fluctuations with multiple timescales, *In prep*, [Stochastic Processes Time Series Analysis Statistics, Multiple Timescales, Ornstein Uhlenbeck](#).
- J. Negrete Jr., I. M. Lengyel, L. Rohde, R. Desai, A. C. Oates, and Frank Jülicher, Stochastic genetic oscillations driven by noisy transcription factors, *In prep.*, [Stochastic Processes, Time Series Analysis, Period Statistics, Mackey Glass](#).
- 2017 Lengyel, I. M., & Morelli, L. G., Multiple binding sites for transcriptional repressors can produce regular bursting and enhance noise suppression, *Physical Review E*, *95*(4), 042412, [Stochastic Processes, Master Equation, Gene Regulation, Noise and Fluctuations](#).
- 2016 Webb, A. B., Lengyel, et al. , Persistence, period and precision of autonomous cellular oscillators from the zebrafish segmentation clock, *eLife*, *5*, e08438, [Nonlinear Dynamics, Ornstein Uhlenbeck, Stuart Landau, Segmentation Clock, Vertebrate Development, Biological Physics](#).
- 2014 Lengyel, I. M., et al., Nonlinearity arising from noncooperative transcription factor binding enhances negative feedback and promotes genetic oscillations , *Papers in Physics* *6*, 060012, [Nonlinear Dynamics, Gene regulation](#).

## Talks and Presentations

- 2018 Frontiers in Bioscience 3 , Temporal precision of short oscillatory time series (poster), Sep 17-19 *Buenos Aires*.
- 2016 Physics of Biology II, Multiple Binding sites for transcriptional repressors can produce regular bursting and enhance noise suppression (poster), Nov 23-25 *Geneva, Switzerland*.
- 2016 XIV TREFEMAC Regional Congress of Statistical Physics and Soft Matter, zebrafish segmentation clock autonomous oscillators (talk), May 4-6 *Balseiro Institue, Argentina*.
- 2016 XIV TREFEMAC Regional Congress of Statistical Physics and Soft Matter, Multiple Binding sites for transcriptional repressors can produce regular bursting and enhance noise suppression (poster), May 4-6 *Balseiro Institue, Argentina*.
- 2015 Latin American Conference on Mathematical Modelling of Biological Systems , Oscillations and noise suppression in a negative feedback with multiple binding sites, Dec 1-4 *Buenos Aires*, [Award: Best poster](#).
- 2015 Annual Meeting of the International Physics of Living Systems, Autonomous cellular oscillators from the zebrafish segmentation clock (talk), Jul 16-20 *Westin Arlington-Gateway in Arlington, VA, USA* ,
- 2014 Celular and Developmental Biology Workshop, Characterization and design of reporters of the segmentation clock, Oct 16-17 *Buenos Aires, Argentina*, [Award: best talk](#).

## Refereeing

- 2018 Physical Review E Journal

## Teaching

- 2013 Teaching Assistant, Physics Departamentl, FCEyN, Universidad de Buenos Aires, Argentina

## Supervisions

2016 - 2017 Mentor of Ezequiel Galrpen M.S. Thesis, Multiple Binding sites for transcriptional repressors can produce regular bursting and enhance noise suppression, *IBioBA / CONICET DF / UBA, Argentina*, Supervisor: Dr. Luis G. Morelli, Qualification: Outstanding.

## Skills and Aptitudes

Statistical Physics | Time Series Analysis | Stochastic Processes | Nonlinear Dynamics | Applied Mathematics | Mathematical Modelling | Numerical Simulations | Biological Physics | Gene regulation

Data Science | Statistics | Machine Learning | Deep Learning | Bayesian Inference

Analytical reasoning | Public Speaking | Scientific Writing | Research | Teamwork | Advising

## Computer Languages and Technologies

Python | Matlab | C++ | Linux |  $\text{\LaTeX}$  | Mathematica | keras | tensorflow | scikit-learn | pandas | sqlite

## Languages

English | Spanish