45 rue d'Ulm
75005 PARIS
+33 (0)6 66 32 97 74
hugoninou@gmail.com
23/10/1996

Hugo NINOU

Education

Oct. 2022 - Now **PhD at ENS-PSL**, *Control of maturating neural networks: theory and data-driven modeling. Under the supervision of Alex Cayco Gajic and Jonathan Kadmon. Recipient of a selective scholarship (CDSN).*

2021-2022 **M2 MVA (Mathematics, Vision and Learning)**, *Université Paris-Saclay.*

2020-2021 **M2 ICFP : Theoretical physics track and École normale supérieure de Paris diploma (DENS)**.

2018-2019 **M1 ICFP and DENS**, *École normale supérieure de Paris.*

2017-2018 **Bachelor in physics and DENS**, *École normale supérieure de Paris*, admitted through competitive examination (rank 25/1137).

2014 - 2017 **Preparatory classes for the Grandes Ecoles, Physics and chemistry track**, *Lycée Aux Lazaristes, Lyon.*

Research experience

May - Sept. 2022 **Hebrew University of Jerusalem**, *Analyzing neural dynamics in the cortico-cerebellar pathway of non-human primate brain during learning. Supervision by Jonathan Kadmon and Yifat Prut.*

- Data analysis on electrophysiological neural recordings.
- implementation of dimensionality reduction techniques (Targeted dimensionality reduction) for analysis of neural trajectories through adaptation in the motor cortex.

April 2021 - July 2021 **ENS-PSL**, *Inference of learning rules in biologically plausible recurrent neural networks. Supervised by Rémi Monasson.*

- Data analysis on calcic recordings of zebra fish brain activity.
- Modeling this brain activity and its learning process based on a RNN model.

Dec. 2019 - May 2020 **LaDHyX, École Polytechnique**, *Studying and modeling emergence phenomena in price heterogeneities. Supervised by Michael Benzaquen and Alan Kirman.*

- Data extraction and analysis
- Comparison between usual statistical physics model to fit the data and conception of an agent based model having phases associated to the different behaviours observed.

Aug. - Nov. 2019 **Canada France Hawaii Telescope**, *Development of a convolutional neural network for detecting parasite sources in the data harvested by the SITELLE spectrometer. Supervision by Simon Prunet and Laurie Rousseau-Nepton.*

- Making of a training set through defect generation on clean images.
- Conception and training of a deep neural network able to detect and label the different types of defects.

Febr.-July 2019 **University of California San Diego**, *Synthesis of self-propelled swimmers and studying of emergence phenomena in their collective behaviour. Supervision by Jérémie Palacci.*

- Participation in developing an experimental setup together with exploring unknown phenomena.
- Developement of a synthesis protocol for self-propelled diffusio-phoretic swimmers able to resist high constraints.

2018-2019 **Lycée Michelet and Lycée Saint-Louis**, *Oral examiner (prépa PCSI and MP*).*

June 2018 **Institut Lumière Matière**, *Electro-cinetic flows in wetting films. Supervision by Anne-Laure Biance.*

- Making of an experimental setup enabling the measure of electro-cinetic flows in a wetting film.

Skills

Languages **English (Fluent) and French (mother tongue)**.

Software **LaTeX, Pack Office, languages : Python, Matlab, Pytorch, Tensorflow, Keras**.