Daniel **Malagarriga**

Curriculum vitae

Daniel Malagarriga
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About me

Experienced researcher with a demonstrated history of working in academia and industry. Skilled in Machine Learning, Artificial Intelligence, Data Science, Data Analytics and large scale simulations.

personal

Daniel Malagarriga
nationality: Spanish
19/04/1987

Areas of specialization

• AI • Machine Learning
• Big Data • Analytics •

Interests

• Maths • Physics
• Computer science
• Complex systems
• Neuroscience • Biology

Personal interests

• Music • Cinema • Books
• Sports • Family •

Short Resumé

2018–Now — **Machine learning researcher**
· Telefonica Innovation Alpha
Research on machine learning interpretability applied to computer vision, NLP and tabular data. Development of interpretable recommender systems based on matrix factorization. Data analysis and visualization through the creation of interactive dashboards. **Tools used;** Python: Pytorch, Tensorflow, sklearn, Numpy, scipy, Pandas, Flask. AWS. Spark. Git.

2017–2018 — **PostDoc**
· Institut de Biomedicina de la UB, Parc Científic de Barcelona
Data analysis of the activity of induced Pluripotent Stem Cells (iPSC) derived from Parkinson's disease affected patients. Large scale simulations of neuronal networks. **Tools used;** Matlab, Python (sklearn, Numpy, scipy, Pandas), UNIX (Bash), C/C++.

2016–2017 — **PostDoc**
· Center for Genomic Regulation, Barcelona Biomedical Research Park
Agent- based modelling of Drosophila larvae chemotaxis. Data analysis or larval chemotaxis. Simulations of larval behaviour. Robotics (kilobots) and swarm behaviour (in collab. w. Dr. James Sharpe's lab at CRG). **Tools used;** Matlab, Python (Numpy, scipy,).

2011–2015 — **Physics Lecturer**
· Universitat Politècnica de Catalunya. BarcelonaTech,
Organization of the physics laboratory lectures for undergraduate students in Industrial and Aerospace engineering. Problem solving instruction. Exam surveillance and correction.

Degrees

2017 — **Applied Physics**
PhD · Universitat Politècnica de Catalunya. BarcelonaTech

2011 — **Biophysics**
M.Sc. · Universitat de Barcelona

2010 — **Physics**
B.Sc. · Universitat Autònoma de Barcelona

Programming

python	
Numpy, scipy...	
sklearn,Tensorflow...	
UNIX	
c/c++	
databases (SQL)	
html, css	
Spark	

Languages

Catalan	C2	mother tongue
Spanish	C2	mother tongue
English	C1	● ● ● ● ○
French	B1	● ● ○ ○ ○

Skills

Organizational skills	● ● ● ● ●
Communication skills	● ● ● ● ○
Soft-skills	● ● ● ○ ○
Teamwork	● ● ● ● ○

Other

Driving license B
Piano, bass and guitar player
Teaching experience (high school and university)
Organization of non-profit social events

Publications

2019 D Malagarriga, AJ Pons, AEP Villa. *Complex temporal patterns processing by a neural mass model of a cortical column*, Cognitive Neurodynamics, 1-14.

2017 D Malagarriga, AEP Villa, J García-Ojalvo, AJ Pons. *Consistency of heterogeneous synchronization patterns in complex weighted networks*, Chaos 27 (031102).

2015 D Malagarriga, MA García-Vellisca, AEP Villa, JM Buldú, J García-Ojalvo, AJ Pons *Synchronization-based computation through networks of coupled oscillators*, Frontiers in computational neuroscience 9, 97.

2015 D Malagarriga, AEP Villa, J Garcia-Ojalvo, AJ Pons *Mesoscopic segregation of excitation and inhibition in a brain network model*, PLoS computational biology 11 (2), e1004007.

2014 D Malagarriga, AEP Villa, J García-Ojalvo, AJ Pons *Excitation/inhibition patterns in a system of coupled cortical columns*, International Conference on Artificial Neural Networks, 651-658.

2014 A Barardi, D Malagarriga, B Sancristobal, J Garcia-Ojalvo, AJ Pons *Probing scale interaction in brain dynamics through synchronization*,Philosophical Transactions of the Royal Society B: Biological Sciences 369.

Talks and conferences

1st-4th March 2018 Computational and Systems Neuroscience (COSYNE) 2018 held in Denver, Colorado (USA). Talk contribution entitled: "Modeling the sensorimotor computations that direct orientation behavior through active sampling".

6th-9th Sep. 2016 25th International Conference on Artificial Neural Networks (ICANN) held in Barcelona, Spain. Poster contribution entitled: "A Robotic implementation of Drosophila larvae chemotaxis".

21st-24th Sep. 2015 NETT International Conference on System Level Approaches to Neural Engineering, held in Barcelona, Spain.

16th-18th Sep. 2015 Net-Works 2015 (International conference on Complex Networks and their Interdisciplinary Applications) conference held in Granada, Spain. Talk contribution entitled "Coexistence of synchronizations in complex weighted networks".

30th-2nd Aug. 2015 Neural Coding, Computation and Dynamics conference (NCCD), (to be) held in Bilbao, Spain. Poster contribution entitled "Mesoscopic segregation of excitation and inhibition in a brain network model".

6th-10th Oct. 2014 Neural coding workshop held in Versailles, France. Poster contribution entitled "Deterministic spatio-temporal activity processing by a neural mass model of a cortical column".

15th-19th Sept, 2014 24th International Conference on Artificial Neural Networks (ICANN) held in the University of Hamburg. Paper and talk contribution entitled "Excitation/inhibition patterns in a system of coupled cortical columns".

3rd-7th Jun. 2013 XXXIII Dynamics Days Europe Conference held in the Polytechnic University of Madrid. Talk contribution entitled "Spontaneous segregation of excitation and inhibition in a system of coupled cortical columns".

Honours and awards

FPU-UPC Grant (Universitat Politècnica de Catalunya. BarcelonaTech., 2011): PhD grant offered by the "Ministerio de Educación y Deporte" (Education and Sports Ministry) from the Spanish Government.

FPI Grant (Hospital Clínic de Barcelona, Universitat de Barcelona, 2011): PhD grant offered by the "Ministerio de Educación y Deporte" (Education and Sports Ministry) from the Spanish Government. Rejected in favour of FPU-UPC.

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