

PABLO LOZANO

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EDUCATION

Universidad Carlos III de Madrid, **Ph.D. in Applied Mathematics** *Sept. 2018 - Present*

Awards: Full scholarship. Research with Ángel Sánchez and Alberto Antonioni.

Research interests: Complex Systems, Evolutionary Game Theory, Behavioral Economics, Computational Social Systems, Modelling, Machine Learning.

UC3M, **M.S. in Mathematical Engineering** *Sept. 2016 - Aug. 2018*

Awards: Full scholarship.

Dissertation: Formation models of hierarchical societies.

Modules included: Numerical Methods, Game Theory, Multivariate Statistics, Stochastic Differential Equations, Simulation, Dynamical Systems, Mathematical Biology.

UC3M, **BSc in Industrial Engineering** *Sept. 2012 - Jun. 2016*

Minor in Electronics and Robotics.

Dissertation: Models for cooperation in dynamical networks with unreliable reputation.

Modules included: Control Theory, Algorithms, Software Engineering, Object-Oriented Programming, Computer Systems Modelling, Robotics, Power and Analog Electronics.

WORK EXPERIENCE

PhD researcher (predoctoral) *Sept. 2018 - Present*

Mathematics Department, Universidad Carlos III de Madrid

Including teaching assistant at different levels. *Undergraduate level*: Linear Algebra to Biomedical Engineering, Industrial Engineering, Telecommunications Engineering, and Data Science and Computation Engineering degrees. *Other*: Introduction to programming with Python and MATLAB.

Member *Sept. 2016 - Present*

GISC & UMICCS

Member of the Interdisciplinary Group in Complex Systems (GISC in Spanish) and of the Mixed Unit for Complexity and Social Sciences (UMMICS in Spanish).

GISC's twitter account community manager (@gisc_group) since Jan. 2020.

Lead teacher *2020 - Present*

Ironhack bootcamp

Teaching course on Machine Learning, Data Science and Analytics using Python and related frameworks.

Visiting scholar *Jan. 2019 - Jun. 2019*

EEB Department, University of Tennessee Knoxville

Research stay at Dr. Sergey Gavrilits' lab in the Ecology and Evolutionary Biology (EEB) department at UTK. Development of a model involving social norms within hierarchical societies.

Teaching assistant *Sept. 2016 - Aug. 2018*

Mathematics Department, Universidad Carlos III de Madrid

Undergraduate level: Calculus I and II, for Energy Systems Engineering and Electrical Engineering.

PUBLICATIONS

- Climate change forces uncertain decisions and cooperation: an experiment** *Late 2021*
Pablo Lozano, Alberto Antonioni & Angel Sánchez.
Work in progress.
- Empirical evidence of verbal priming increasing cooperation** *Mid 2021*
Pablo Lozano, Alberto Antonioni, Francesca Giardini, Rafael Wittek & Siegwart Lindenberg.
Work in progress.
- Hierarchies and social norms: an experimental approach** *Mid 2021*
Pablo Lozano, Alberto Antonioni & Angel Sánchez.
Under review.
- Cooperation, social norms, and hierarchical societies** *Sep. 2020*
Pablo Lozano, Sergey Gavrillets & Angel Sánchez.
Scientific Reports 10, Article number: 15359.
- Shall we turn off the media? Global information can destroy local cooperation in the one-dimensional ring** *Jun. 2019*
B. Aydin, M. Biondo, D. Gupta, M. Ivaldi, F. Lipari, Pablo Lozano, F. Parino, E. Bilancini, L. Boncinelli, V. Capraro.
arXiv:1906.09133.
- Cooperation on dynamic networks within an uncertain reputation environment** *Jun. 2018*
Pablo Lozano, Alberto Antonioni, Marco Tomassini & Angel Sánchez.
Scientific Reports 8, Article number: 9093.

CONTRIBUTIONS

- SFI Complexity Interactive** *Jun.-Jul 2021*
Summer school at Santa Institute, New Mexico (USA).
- Hierarchies and cooperation: an experiment** *May. 2021*
Talk at FisEs Joven 2021.
- Cooperation, social norm internalization, and hierarchical societies** *Dec. 2020*
Talk at 8th Computational Social Science (CSS) Satellite event at the Conference on Complex Systems (CCS).
- Hierarchies can arise spontaneously in egalitarian societies** *Jul. 2019*
Poster at 5th International Conference in Computational Social Science (IC²S²).
- Complexity 72 Hours** *Jun. 2019*
Part of Ennio Bilancini's group researching on social physics.
Derived from the three-day research event, there's a pre-print in arXiv.
- SEEHB meeting** *Apr. 2019*
Participant in the second edition of the Southern Eastern Evolutionary and Human Behavior meeting at Georgia State University, Georgia (Atlanta).
- European Night of the Researchers** *Nov. 2018*
Communication post: "Genre and technology: EU projects about Big Data."
- Cine: críticas, ingresos y correlaciones** *Dec. 2016*
Communication post at Periódico Expansión.

TEACHING

Second semester, course 20/21

Programming (experimental design for behavioral economics with oTree, Django, Python) for Master in Economics Analysis, part of the Economics PhD program.

Course 20/21

Linear Algebra for Telecommunications Engineering, and Industrial Engineering.

Course 19/20

Linear Algebra for Industrial Engineering, Telecommunications Engineering, and Data Science Engineering.

Course 17/18

Calculus in one variable for Energy Systems Engineering, and Electrical Engineering degrees.

TECHNICAL SKILLS

Programming	Python (> 8 years), C (> 4y), R (> 4y), Scala (~ 2y), MATLAB (~ 2y), Angular and Javascript (~ 1y).
Data analysis	Numpy, Pandas, Plotly, Matplotlib and Seaborn, TensorFlow, Scikit, Keras, PyTorch, SQL (mainly PostgreSQL).
Web development	Full-stack (HTML, CSS/SASS/LESS, Javascript), Django and Flask.
Frameworks and practices	Git, Scrum, Agile. Using oTree, experiment design and data analysis in behavioral economics.
General software	<i>OS</i> : Linux admin certification, experienced in OSX, Windows. <i>Writing</i> : Latex, Scrively and Office suite.
Writing, editing	Reviewer for Nature Scientific Reports, PLOS One, and IOP Science scientific journals. Stanford University course “Writing in the Sciences.”
Engineering and desing	Ansys, Catia and SolidEdge (~ 2y).

LANGUAGES

Spanish: native, **English**: professional/academic, **French**: intermediate/fluent, **German**: basic, **Italian**: basic, **Russian**: basic (self-taught).

EXTRA-CURRICULAR

Community Manager for (@gisc_group) account.

Seminar organizer at Universidad Carlos III de Madrid for GISC group.

Webmaster for Mathematics Department website at Universidad Carlos III de Madrid.

Linux sysadmin for Mathematics Department at Universidad Carlos III de Madrid.

Multiple hackathon winner: *IBM hackaton* at IE (2017), *Tech-Fest* (2018).

Programming tutor for nonprofit organizations.

Ph.D. student representative at Universidad Carlos III de Madrid, from 2016 up to 2020.