

# Gabriel Madirolas, PhD

## Curriculum Vitae

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## Educational Background

2013  
2017

**PhD Biophysics**, Facultad de Ciencias, Universidad Autónoma de Madrid (*UAM*), Madrid, Spain.

2012  
2013

**MSc Biophysics**, Facultad de Ciencias, Universidad Autónoma de Madrid (*UAM*), Madrid, Spain.  
60 ECTS

2005  
2011

**BSc Fundamental Physics**, Facultad de Ciencias Físicas, Universidad Complutense de Madrid (*UCM*), Madrid, Spain.  
300 ECTS

## Theses

### PhD Thesis

**TITLE** Collective Intelligence in Estimation Problems: How Groups Achieve It and How to Build Techniques to Improve It

**ADVISOR** Gonzalo G. de Polavieja, PhD

**LABORATORIES** Neuroethology Group, Cajal Institute, CSIC, Madrid, Spain  
Collective Behavior Lab, Champalimaud Research, Champalimaud Center for the Unknown (hereafter CR-CCU), Lisboa, Portugal (visiting student)

### MSc Thesis

**TITLE** A Model of Decision-Making in Groups of Humans

**ADVISOR** Gonzalo G. de Polavieja, PhD

**LABORATORY** Neuroethology Group, Cajal Institute, CSIC, Madrid, Spain

## Scientific Positions

2018

### POSTDOCTORAL CONTRACT.

**ADVISOR** Alfonso Pérez-Escudero, PhD

**LABORATORY** IVEP Group, Centre de Recherches sur la Cognition Animale, Toulouse, France

**FUNDING AGENCY** Centre National de la Recherche Scientifique, Ministère de l'Enseignement Supérieur, de la Recherche et de l'Innovation, Gouvernement Français

2014  
2017

## DOCTORAL CONTRACT (FELLOW).

**ADVISOR** Gonzalo G. de Polavieja, PhD

**LABORATORY** Neuroethology Group, Cajal Institute, CSIC, Madrid, Spain

**FUNDING AGENCY** Secretaría de Estado de Investigación, Desarrollo e Innovación, Ministerio de Economía y Competitividad, Gobierno de España

## Publications

- [Laan, Madirolas & de Polavieja, 2017] Laan, A., **Madirolas, G.** & de Polavieja, G. G. (2017). **Rescuing Collective Wisdom When the Average Group Opinion is Wrong.** *Frontiers in Robotics and AI*, 4, 56.
- [Madirolas & de Polavieja, 2015] **Madirolas, G.** & de Polavieja, G. G. (2015). **Improving Collective Estimations Using Resistance to Social Influence.** *PLoS Comput Biol*, 11(11), e1004594.
- [Madirolas & de Polavieja, 2014] **Madirolas, G.** & de Polavieja, G. G. (2014). **Wisdom of the confident: Using social interactions to eliminate the bias in wisdom of the crowds.** *Proceedings of the Collective Intelligence Conference (MIT)*, pp. 10-12.
- [Ioannou, Madirolas, Brammer, Rapley & de Polavieja] Ioannou, C.C., **Madirolas, G.**, Brammer, F.S., Rapley, H.A. & de Polavieja, G. G. (Submitted). **Adolescents resolve disagreement using a geometric mean rule and show collective intelligence.**

## Posters In Events

- Champalimaud Neuroscience Symposium 2016 **Madirolas, G.** & de Polavieja, G.G. In collaboration with Ioannou, C.C. **Bayesian estimation and logarithmic-like representation lead to geometric mean optimal averaging in group estimation tasks.** Champalimaud Neuroscience Symposium. Sep 21-24th, 2016. CR-CCU, Lisbon, Portugal
- Collective Intelligence 2014 **Madirolas, G.** & de Polavieja, G.G. **Wisdom of the Confident: Using Social Interactions to Eliminate Bias in Wisdom of the Crowds.** Collective Intelligence 2014. Jun 10-12th, 2014. MIT, Cambridge, MA, USA

## Participation In Events

2016

**Champalimaud Neuroscience Symposium**, CR-CCU, Lisbon, Portugal.

2016

**Social Neuroscience Club Workshop**, ISPA Instituto Universitário, Lisbon, Portugal.

2015

**Champalimaud Neuroscience Symposium**, CR-CCU, Lisbon, Portugal.

2015

**Social Insect Behaviour Workshop**, CR-CCU, Lisbon, Portugal.

2014

**Collective Intelligence 2014**, MIT, Cambridge, MA, USA.

2013

**Behaviour 2013**, Sage Gateshead, Newcastle, United Kingdom.

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## Science-communication Events

2014

**Interactivos?'14**, *Scientific Facilitator*.  
MediaLab-Prado, Madrid, Spain

2014

**Deliberation Day**, *Interactive experiment*.  
Ar Event, CR-CCU, Lisbon, Portugal

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## Skills

**Programming** Python, Matlab,  $\LaTeX$

*Intermediate knowledge*

C++, Java

*Basic knowledge*

**OS** Windows, Linux, macOS

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## Other Certificates

**Programming** *Course on Object-Oriented Programming (170 hours)*

C++ and Java

Ministry of Education, Spanish Government

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## Languages

Spanish Native

English Fluent

Portuguese Intermediate

French Basic

German Basic

Catalan Basic