

## CURRICULUM VITAE – ROI NAVEIRO FLORES

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### PERSONAL INFORMATION

Roi Naveiro Flores  
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### EDUCATION

**PhD program at the Complutense University of Madrid** (2016-present).  
Advisors: David Ríos Insua (ICMAT - Institute of Mathematical Sciences, Spanish Research Council, CSIC) and David Gómez-Ullate Oteiza (University of Cádiz & Complutense University of Madrid). PhD program: *Mathematical Engineering, Statistics and Operational Research*. (<http://www.mat.ucm.es/imeio/>). Expected completion date: October 2020.

**Masters degree in theoretical physics from the Complutense University of Madrid** (2016-2017). Thesis advisor: David Gómez-Ullate Oteiza (ICMAT-CSIC & Complutense University of Madrid). Thesis title: *Fraud Detection in Electronic Payments*.

**Bachelor degree in physics from the University of Salamanca** (2011-2015). Thesis advisor: David Rodríguez Entem (University of Salamanca). Thesis title: Resolution of the Nucleon-Nucleon scattering problem using the N/D method.

### JOB EXPERIENCES

**2016 October → present** FPU PhD research scholar in the Statistics, Probability and Operations Research group at the Institute of Mathematical Science (ICMAT-CSIC) located in Madrid, Spain.

**2015 June → September 2015** Research scholar at the Astrophysical Institute of the Canary Islands (IAC) located in Tenerife, Canary Islands, Spain. Working for the project *Searching for star clusters in the dwarf irregular galaxy IC1613*.

**2014 September → 2015 June** Research scholar at the Institute of Fundamental Physics and Mathematics (IUFFyM) located in Salamanca, Spain. Working for the project *Resolution of Nucleon-Nucleon scattering with the N/D method*.

### RESEARCH STAYS IN NATIONAL AND INTERNATIONAL CENTERS

**2019 July → 2019 December** Stay at the Statistical and Applied Mathematical Sciences Institute (SAMSI) and the department of Statistical Science of Duke University, Durham (North Carolina).

**2019 January** Stay at University of Cádiz, Cádiz (Spain).

**2018 August → 2018 December** Stay at the department of Statistical Science of Duke University, Durham (North Carolina), working with Professor David L. Banks.

#### SCHOLARSHIP AWARDS

- 2018 September** Short term research scholarship awarded by the Spanish Ministry of Education for a research stay in Duke University, Durham (North Carolina).
- 2016 June** FPU scholarship awarded by the Spanish Ministry of Education for PhD studies.
- 2015 May** Research scholarship awarded by the Astrophysical Institute of the Canary Island (IAC) located in Tenerife, Spain.
- 2014 October** Research scholarship at the Institute of Fundamental Physics and Mathematics (IUFFyM) located in Salamanca, Spain. Awarded by the Spanish Ministry of Education.

#### PUBLICATIONS

- Adversarial Classification: An adversarial Risk Analysis approach (2019). Naveiro, R., Redondo, A., Insua, D. R., & Ruggeri, F. *International Journal of Approximate Reasoning*.
- Large Scale Automated Forecasting for Monitoring Network Safety and Security (2019). Naveiro, R., Rodríguez, S., & Ríos Insua, D. *Applied Stochastic Models in Business and Industry*.
- Gradient Methods for Solving Stackelberg Games. Naveiro, R., & Ríos Insua, D. *Lecture Notes in Computer Science*.
- Reinforcement Learning under Treats. (2019). Gallego, V., Naveiro, R., & Ríos Insua, D. *AAAI 2019. Student Track*.
- Augmented Probability Simulation Methods for Non-cooperative Games (2019). Ekin, T. Naveiro, R., Torres, A., & Ríos Insua, D. *arXiv preprint arXiv:1910.04574 (Preprint submitted to Operations Research)*.
- Opponent Aware Reinforcement Learning (2019). Gallego, V., Naveiro, R., & Ríos Insua, D. *arXiv preprint arXiv:1809.01560*.
- Adversarial Machine Learning: Perspectives from Adversarial Risk Analysis (2019) (*In preparation*).

#### TEACHING EXPERIENCES

- 2019 February → 2019 May** Course on Machine Learning with R targeted to researchers from the Instituto Nacional de Estadística (National Statistics Institute). INE, Spain.
- 2019 February → 2019 May** Lecturer of Applications of Stochastic Processes for undergraduate students in the last year of the degree on Mathematics. University Complutense of Madrid, Spain.
- 2018 June** Teaching assistant in the XII Modelling Week for master students of the *Master of Mathematical Engineering*. University Complutense of Madrid, Spain.
- 2017 November → 2017 December** Courses on Python and Data Science at *Dirección General de Ordenación del Juego (DGOJ)*, Ministry of Finance, Spain.

TRANSFERENCE  
PROJECTS

- 2018 October → 2019 February** Geoprofiling systems. Partner: A3SEC.
- 2016 October → 2017 July** Monitoring for anomalous behaviour in massive traffic time series using dynamic linear models. Partner: A3SEC.
- 2015 November → 2016 July** Fraud Detection in Electronic Payments. Partner: Evendor Engineering.

CONFERENCES, TALKS  
AND INTERNATIONAL  
SCHOOLS

- 2019 November 1st** Invited seminar speaker to *The Institute for Integrating Statistics in Decision Sciences. Department of Decision Sciences. The George Washington University*  
**Talk:** *Security Games in the New Paradigm: Solution Techniques.* The George Washington University, Washington D.C. (USA).
- 2019 October 25th → 2019 October 27th** Attendance to the conference: *Algorithmic Decision Theory*, organized by the Duke Fuqua School of Business.  
**Talk:** *Gradient Methods for Solving Stackelberg Games.* Duke University, Durham, NC (USA).
- 2019 August 5th → 2019 August 9th** Attendance to the conference: *Games, Decisions, Risk and Reliability Opening Workshop*, organized by the Statistical and Applied Mathematical Sciences Institute.  
**Poster:** *Augmented Probability Simulation Methods for Non-cooperative Games.* NC State University, Raleigh, NC (USA).
- 2019 July 30th → 2019 August 2nd** Attendance to the conference: *Second Conference on Risk Analysis in the Digital Era*, organized by the Society for Risk Analysis and the University at Buffalo.  
**Poster:** *Augmented Probability Simulation Methods for Non-cooperative Games.* Buffalo (USA).
- 2019 June 12th → 2019 June 14th** Invited speaker to the conference: *Eleventh Workshop on Bayesian Inference in Stochastic Processes*, organized by the Spanish Royal Academy of Natural Sciences in collaboration with ICMAT-CSIC. Madrid (Spain).  
**Talk:** *Reinforcement Learning Under Threats.*
- 2018 July 23rd → 2018 July 27th** Attendance to the Summer School: *2nd International Summer School on Deep Learning*, organized by University of Genova and IRDTA - Brussels/London. Genova (Italy).
- 2018 May 29th → 2018 June 1st** Attendance to the conference: *XXXVII National Congress of Statistics and Operational Research*, organized by the Spanish Society of Statistics and Operational Research (SEIO).  
**Talk:** *Adversarial Classification: An Adversarial Risk Analysis approach.* Nominated for the prize *Ramiro Melendreras*. Oviedo (Spain).
- 2017 November 13th → 2017 November 15th** Attendance to the conference: *1st Spanish Young Statisticians and Operational Researchers Meeting (SYSORM)*, organized by the Spanish Society of Statistics and Operational Research (SEIO) in collaboration with University of Granada (Spain).  
**Talk:** *Adversarial Classification: An Adversarial Risk Analysis approach.* Granada (Spain).

**2017 September 4th → 2017 September 6th** Attendance to Summer School: *Accelerating Data Science with HPC*, organized by the CSCS-ICS-DADSi. Lugano (Switzerland).

**2017 June 13th → 2017 June 15th** Attendance to the conference: *Bayesian Inference in Stochastic Processes (BISP10)*, organized by the Bocconi University in collaboration with the International Society for Bayesian Analysis (ISBA). Milano (Italy).

**Talk:** *Monitoring for anomalous behaviour in massive traffic time series.*

**2017 June 7th → 2017 June 9th** Attendance to the conference: *Games and Decisions in Risk and Reliability (GDRR)*, organized by the Spanish Royal Academy of Natural Sciences in collaboration with ICMAT-CSIC. Madrid (Spain).

**Talk:** *Fraud detection in electronic payments.*

**2017 January 16th → 2017 January 20th** Attendance to Winter School: *Memory School*, organized by the Centre de Recerca Matemàtica as part of the Intensive Research Program on the Mathematics of Memory (MATHMEM). Barcelona (Spain).

**2016 October 27th → 2016 October 28th** Attendance to the workshop: *Mathematical Solutions for Industry: Success Stories and perspectives*, organized by the Institute of Mathematical Sciences (ICMAT) in collaboration with Red Española de Matemática Industrial (Math-in). Madrid (Spain).

**Poster Presentation:** *Random Forest Algorithm in Fraud Detection.*

**2016 March 9th** Attendance to the conference: *BBVA-spor winter day. Data Science and Statistical Learning*, organized by the Institute of Mathematical Sciences (ICMAT). Madrid (Spain).

#### ORGANIZED CONFERENCES

**2019 June 12th → 2019 June 14th** 11th Workshop on Bayesian Inference in Stochastic Processes at the Spanish Royal Academy of Sciences.

**2019 May 20th → 2019 May 24th** 2nd BYMAT Conference: Bringing Young Mathematicians Together at the Institute of Mathematical Sciences (ICMAT-CSIC). *BYMAT Network with Fundación BBVA as exclusive partner.* <https://www.icmat.es/congresos/2019/BYMAT/>

**2018 May 7th → 2018 May 9th** 1st BYMAT Conference: Bringing Young Mathematicians Together at the Institute of Mathematical Sciences (ICMAT-CSIC). *BYMAT Network with Fundación BBVA as exclusive partner.* <https://www.icmat.es/congresos/2018/BYMAT/>

**2017 June 7th → 2017 June 9th** 5th symposium on Games and Decisions in Reliability and Risk at the Spanish Royal Academy of Sciences.

#### STUDY GROUPS WITH INDUSTRY

**2018 June 18th → 2018 June 22th** Attendance to XII Modelling Week of the *Master of Mathematical Engineering* organized by University Complutense of Madrid. Madrid (Spain).

**Challenge:** Machine Learning techniques in the modeling of credit risk admission.

**2017 May 15th → 2017 May 19th** Attendance to European Study Group with Industry: *ESGI 131*, organized by the Basque Centre for Applied Mathematics (BCAM) in collaboration Red Española de Matemática Industrial (Math-in). Bilbao (Spain).

**Challenge:** Big Data in Sports: Predictive Models for Basketball Player's Performance.