

## CURRICULUM VITAE – ROI NAVEIRO FLORES

---

PERSONAL INFORMATION	<p>Roi Naveiro Flores Institute of Mathematical Sciences (ICMAT-CSIC) Campus Cantoblanco UAM. C/ Nicolás Cabrera, 13-15, 28049, Madrid, SPAIN tel: +34 912999 733 cell phone: +34 679630996 GitHub: roinaveiro <a href="mailto:roi.naveiro@icmat.es">roi.naveiro@icmat.es</a></p>
EDUCATION	<p><b>PhD program at the Complutense University of Madrid</b> (2016-present). Advisors: David Ríos Insua (ICMAT-CSIC) and David Gómez-Ullate Oteiza (Cádiz University &amp; Complutense University of Madrid). PhD program: <i>Mathematical Engineering, Statistics and Operational Research</i>. (<a href="http://www.mat.ucm.es/imeio/">http://www.mat.ucm.es/imeio/</a>)</p> <p><b>Masters degree in theoretical physics from the Complutense University of Madrid</b> (2016-2017). GPA: 9.3/10.0. Thesis advisor: David Gómez-Ullate Oteiza (ICMAT-CSIC &amp; Complutense University of Madrid). Thesis title: <i>Random Forest Algorithm in Fraud Detection</i>.</p> <p><b>Bachelor degree in physics from the University of Salamanca</b> (2011-2015). GPA: 9.1/10.0. Thesis advisor: David Rodríguez Entem (University of Salamanca). Thesis title: Resolution of the nucleon-nucleon scattering problem using N/D method.</p> <p><b>Leonés school</b> (2009-2011) Secondary studies specializing in science and technology at Leonés school located in León (Spain).</p>
JOB EXPERIENCES	<p><b>2016 October → present</b> FPU PhD research scholar on Machine Learning and Security at the Institute of Mathematical Science (ICMAT-CSIC) located in Madrid, Spain.</p> <p><b>2015 July → September 2015</b> Research scholar at the Astrophysical Institute of the Canary Island(IAC) located in Tenerife, Canary Islands, Spain. Working for the project <i>Searching for star clusters in the dwarf irregular galaxy IC1613</i>.</p> <p><b>2014 September → 2015 July</b> Research scholar at the Institute of Fundamental Physics and Mathematics (IUFFyM) located in Salamanca, Spain. Working for the project <i>Resolution of Nucleon-Nucleon scattering with the N/D method</i>.</p>
STAYS IN NATIONAL AND INTERNATIONAL CENTERS	<p><b>2019 July → 2019 December</b> Stay at the Statistical and Applied Mathematical Sciences Institute (SAMSI) and the department of Statistical Science of Duke University, Durham (North Carolina).</p> <p><b>2019 January</b> Stay at University of Cádiz, Cádiz (Spain).</p>

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

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*.
- Opponent Aware Reinforcement Learning (2019). Gallego, V., Naveiro, R., & Ríos Insua, D. *arXiv preprint arXiv:1809.01560. (Preprint submitted to the Artificial Intelligence)*.
- Augmented Probability Simulation Methods for Non-cooperative Games. (*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 AND  
INTERNATIONAL  
SCHOOLS

- 2019 August 12th → 2019 August 16th** Attendance to the conference: *Deep Learning Opening Workshop*, organized by the Statistical and Applied Mathematical Sciences Institute.
- Poster:** *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*.

**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*.

**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.

#### AWARDS

**2018 September** Short term research scholarship by the Spanish Ministry of Education for a stay in Duke University, Durham (North Carolina).

**2016 June** FPU scholarship by the Spanish Ministry of Education for PhD studies.

**2015 May** Research scholarship by the Astrophysical Institute of the Canary Island (IAC) located in Tenerife, Spain.

**2014 October** Research scholarship by the Institute of Fundamental Physics and Mathematics (IUFFyM) located in Salamanca, Spain.

**2011 July** Graduated with honours in secondary studies, specializing in science and technology by Leonés High School located in León, Spain.

**2010 June** First Certificate in English by the University of Cambridge.

## COURSES TAKEN

- 2018 January** Ordinal Classification. Autonomous University of Madrid.
- 2018 January** Entrepreneurship and Innovation. Polytechnic University of Madrid.
- 2017 November** Stochastic Differential Equations. Complutense University of Madrid.
- 2017 October** Support Vector Machines: Mathematical Optimization in Supervised Learning Problems. Complutense University of Madrid.
- 2017 June 22nd** Introduction to parallel programming. Institute of Mathematical Sciences (ICMAT-CSIC).
- 2017 May 4th** Introduction to high performance computing infrastructures. Institute of Mathematical Sciences (ICMAT-CSIC).
- 2017 May** Probabilistic Graphical Models 1: Representation (with Honors). Stanford University. Coursera Platform. *License Number: 9QMVW5P8T8DN*.
- 2017 March** Developing Data Products. Johns Hopkins University. Coursera Platform. *License Number: 4PA4FMXRGXEA*.
- 2017 March** Practical Machine Learning. Johns Hopkins University. Coursera Platform. *License Number: UVBWB3S73LCE*.
- 2017 March** New Approaches to Inferential Methods Based on Empirical Likelihood. Complutense University of Madrid.
- 2017 February** Regression Models. Johns Hopkins University. Coursera Platform. *License Number: NWTMQS8K7ARW*.
- 2017 January** Survival Analysis. Statistical Evaluation of Diagnosis Tests. Complutense University of Madrid.
- 2017 January** Statistical Inference. Johns Hopkins University. Coursera Platform. *License Number: BH963LMZ463G*.
- 2016 December** Reproducible Research. Johns Hopkins University. Coursera Platform. *License Number: L76S5KNZ4R29*.
- 2016 November** Game Theory. Complutense University of Madrid.
- 2016 November** Mathematical modelization of cognition in robots. Complutense University of Madrid.
- 2016 November** Exploratory Data Analysis. Johns Hopkins University. Coursera Platform. *License Number: D3PZR4QTB7RV*.
- 2016 November** Getting and Cleaning Data. Johns Hopkins University. Coursera Platform. *License Number: W3XEPD5JND4Z*.
- 2016 October** Multicriteria decision. Complutense University of Madrid.
- 2016 October** R Programming. Johns Hopkins University. Coursera Platform. *License Number: X7UUSQEX3B9N*.
- 2016 October** The Data Scientist's Toolbox. Johns Hopkins University. Coursera Platform. *License Number: 6W9VBD2985E5*.

COMPUTER SKILLS	<p><b>Programming, scripting and markup languages</b> Python, R, R Markdown, Bash, Mathematica, L<sup>A</sup>T<sub>E</sub>X, C and Fortran.</p> <p><b>Operating systems</b> Advanced experience with most flavours of Linux: Ubuntu, Debian. Experienced with Mac OS and to some extent Microsoft Windows.</p> <p><b>Databases</b> MySQL and SQLite.</p>
LANGUAGE SKILLS	<p><b>Galician:</b> Native tongue. <b>Spanish:</b> Native tongue. <b>English:</b> Fluent. <b>Portuguese:</b> Basic. <b>Italian:</b> Basic.</p>
EXTRACURRICULAR ACTIVITIES	<p><b>2013 July</b> <i>Youth Pass</i> certificate for participating in the project <i>Emplea tu creatividad</i> which was an exchange programme involving 22 students from Italy and Spain.</p> <p><b>2012 November</b> Awarded with a debating certificate by the University of Salamanca.</p>