

**Part A. PERSONAL INFORMATION**

<b>CV date</b>	10/5/2023
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First name	LUIS R.		
Family name	IZQUIERDO MILLÁN		
Gender (*)	Male	Birth date	28/08/1977
e-mail	<a href="mailto:lrizquierdo@ubu.es">lrizquierdo@ubu.es</a>	URL Web:	<a href="http://www.luis.izqui.org">www.luis.izqui.org</a>
Open Researcher and Contributor ID (ORCID) (*)	<a href="https://orcid.org/0000-0003-1057-4465">0000-0003-1057-4465</a>		

**A.1. Current position**

Position	Full Professor		
Initial date	14/11/2019		
Institution	Universidad de Burgos		
Department/Center	Ingeniería de Organización	Escuela Politécnica Superior	
Country	Spain		
Keywords	Evolutionary Game Theory, Agent-based Modelling		

**A.2. Previous positions (research activity interruptions, art. 14.2.b)**

Period	Position/Institution/Country/Interruption cause
2011-2019	Associate Professor / Universidad de Burgos / Spain
2006-2011	Assistant Professor / Universidad de Burgos / Spain
2002-2006	Research Scientist / Macaulay Institute / United Kingdom

**A.3. Education**

PhD, Licensed, Graduate	University	Year
PhD in GAME THEORY and COMPUTER SIMULATION	Manchester Metropolitan University (UK)	2008
BSc in BUSINESS ADMINISTRATION and ECONOMICS	Universitat Oberta de Catalunya (Spain)	2003
MSc in INDUSTRIAL ENGINEERING	University of Valladolid (Spain) & University of Newcastle upon Tyne (UK)	2002

**A.4. General indicators of quality of scientific production (see instructions)**

3 six-year research periods (2003-2008; 2009-2014; 2015-2020)

1 six-year knowledge transfer & innovation period

Total citations in Scopus: 877

Source: [Scopus](#)

Total citations in Google Scholar: 2377 (948 since 2018)

Source: [Google Scholar](#)

Number of publications in JCR: 9 Q1, 9 Q2, 9 Q3, 4 Q4

Source: Journal Citation Reports

h-index = 25

Source: [Google Scholar](#)

**Part B. CV SUMMARY (max. 3500 characters, including spaces)**

I studied a 7-year-long MSc in Industrial Engineering (Best student's record award) and –simultaneously– a BSc in Business Administration and Economics (average grade 9.5/10). After graduating, I worked for more than 4 years as a research scientist at the Macaulay Institute (UK). During that time, I also did my PhD at the Business School of Manchester Metropolitan University (UK). My PhD thesis was listed in the Top Ten at the EDAMBA (*European Doctoral Programmes Association in Management and Business Administration*) Thesis Competition 2009.

The period that I spent working and studying at top research institutions in the UK was key for my education as a scientist. After this intense research period, I started working as an Assistant Professor at the University of Burgos (Spain). At this University I have taught more than 20 different courses, both in Spanish and –by personal choice– in English, and I have supervised the final year project of more than 50 students for their degree in Industrial Engineering or in Computer Science. I enjoy teaching immensely, and I undertake great efforts to conduct my teaching activity at the highest possible level. My students recognize this work in the institutional surveys, on which I am consistently assessed well above my University standards (average grade greater than 4.5/5 in more than 450 student surveys).



While working at the University of Burgos, I have kept visiting prestigious research institutions all around the globe, such as the Santa Fe Institute (USA; 2005), CSIRO (*Commonwealth Scientific and Industrial Research Organisation*, Australia; 2006, 2007 and 2008), the Economics Department at the European University Institute (Italy; 2009–2010, with Prof. Vega Redondo), the University of Western Australia Business School (Australia; 2013, 2014 and 2015), the Economics Department at the University of Wisconsin-Madison (USA; 2016 and 2018, with Prof. Sandholm), and the Center for Control, Dynamical Systems, and Computation, UCSB (USA, 2022). I have also worked as a consultant for high-tech companies such as Valve Corporation (USA, 2013).

The research I have conducted up to date is mainly theoretical and methodological, and has been focused on Evolutionary Game Theory and the analysis of Complex Systems. Within these fields I have studied a range of different topics, such as conditions and mechanisms to promote cooperation in social dilemmas, market efficiency under quality uncertainty, and agent-based evolutionary game dynamics. Most of my research lies at the interface between Economics and Computer Science and it has led to the publication of more than 30 JCR papers in journals such as *Theoretical Economics*, *Journal of Economic Theory*, *Games and Economic Behavior*, *Journal of Economic Dynamics & Control*, *JASSS*, *Journal of Theoretical Biology*, and *Journal of Evolutionary Economics*. I have conducted reviews for many international journals and I am also an associate editor of the JCR *Journal of Artificial Societies and Social Simulation*.

Finally, together with Segismundo S. Izquierdo and Bill Sandholm, I have designed, implemented and released more than 30 open-source computational programs, which are available online, together with comprehensive user guides. See, for instance, [models written in Mathematica](#) and [in NetLogo](#). These programs are used by many scholars all around the world both for research and for teaching purposes.

## **Part C. RELEVANT MERITS** (*sorted by typology*)

### **C.1. Ten recent publications**

- Izquierdo, S.S. & Izquierdo, L.R. (2023). Strategy sets closed under payoff sampling. *Games and Economic Behavior*, 138, 126-142. [<link>](#)
- Mauhe, N., Izquierdo, L.R. & Izquierdo, S.S. (2023). Social Simulation Models as Refuting Machines. *Journal of Artificial Societies and Social Simulation*, vol. 26, no. 2 (8) [<link>](#)
- Izquierdo, S.S. & Izquierdo, L.R. (2022). Stability of Strict Equilibria in Best Experienced Payoff Dynamics: Simple Formulas and Applications. *Journal of Economic Theory*, 105553. [<link>](#)
- Izquierdo, L.R., Izquierdo, S.S. & Rodríguez, J. (2022). Fast and Scalable Global Convergence in Single-Optimum Decentralized Coordination Problems. *IEEE Transactions on Control of Network Systems*. [<link>](#)
- Izquierdo, S.S. & Izquierdo, L.R. (2021). “Test two, choose the better” leads to high cooperation in the Centipede game. *Journal of Dynamics and Games*. [<link>](#)
- Sandholm, W.H., Izquierdo, S.S. & Izquierdo, L.R. (2020). Stability for Best Experienced Payoff Dynamics. *Journal of Economic Theory*, 185, 104957. [<link>](#)
- Izquierdo, L.R., Izquierdo, S.S. & Sandholm, W.H. (2019). An Introduction to ABED: Agent-Based Simulation of Evolutionary Game Dynamics. *Games and Economic Behavior*, 118, pp. 434–462. [<link>](#)
- Sandholm, W.H., Izquierdo, S.S. & Izquierdo, L.R. (2019). Best Experienced Payoff Dynamics and Cooperation in the Centipede Game. *Theoretical Economics*, 14, pp. 1347-1385. [<link>](#)
- Izquierdo, L.R., Izquierdo, S.S. & Sandholm, W.H. (2018). EvoDyn-3s: A Mathematica Computable Document to Analyze Evolutionary Dynamics in 3-Strategy Games. *SoftwareX*, vol. 7, pp. 226-233. [<link>](#)



- Izquierdo, S.S. & Izquierdo, L.R. (2018). Mamdani Fuzzy Systems for Modelling and Simulation: A Critical Assessment. *Journal of Artificial Societies and Social Simulation*, vol. 21, no. 3. <[link](#)>

## C.2. Relevant recent research projects

### **Interacciones Dinámicas Distribuidas: Protocolos Best Experienced Payoff y Separación Endógena**

Financed by: Ministerio de Ciencia e Innovación  
Partners: Universidad de Burgos and Universidad de Valladolid.  
Duration, from: 1/09/2021 to: 31/08/2025. Ref. PID2020-118906GBI00  
Principal Investigator: Luis R. Izquierdo & Segismundo S. Izquierdo. Funding: 32.307 €

### **Dinámicas Evolutivas de Procesos Socioeconómicos Aplicados**

Financed by: Ministerio de Economía, Industria y Competitividad  
Partners: Universidad de Burgos and Universidad de Valladolid.  
Duration, from: 1/01/2018 to: 31/12/2020. Ref. ECO2017-83147-C2-2-P  
Principal Investigator: Luis R. Izquierdo & Segismundo S. Izquierdo. Funding: 12.100 €

### **Sistemas Complejos Socio-Tecnológicos**

Financed by: Ministerio de Ciencia e Innovación. Universidades  
Coordinating partner: Universidad Politécnica de Madrid  
Duration, from: 1/01/2020 to: 31/12/2021. Ref. RED2018-102518-T  
Principal Investigator: Rosa María Benito Zafrilla. Funding: 12.000 €

### **Modelling Network Innovation Performance Capability**

Financed by: Australian Research Council Ref: ARC DP130100570  
Partners: The University of Western Australia; University of New England; Univ. de Burgos.  
Duration, from: 1/01/2013 to: 30/06/2017 Ref. DP130100570,  
Principal Investigator: Prof. Sharon Purchase Funding: 124.574 €

### **Sistemas Complejos Socio-tecnológicos**

Financed by: Ministerio de Economía y Competitividad (Redes de Excelencia)  
Coordinating partner: Universitat de Barcelona Ref: FIS2015-71795-REDT  
Duration, from: 01/01/2016 to: 31/12/2017 Funding: 30.000 €  
Principal Investigator: Josep Perelló Palou Participating scientists: 37

## C.3. Relevant contracts, technological or transfer merits

### **1 six-year knowledge transfer & innovation period**

#### **Implementación de una aplicación para teléfonos móviles que facilite la optimización centralizada y descentralizada de la gestión dinámica de guardias y turnos de trabajo**

Financed by: Universidad de Burgos. Duration: 10/07/2015 - 31/12/2015  
Principal Investigator: Luis R. Izquierdo Millán  
Participating scientists: 5 Funding: 3.000 €

#### **Análisis de la estructura de la red social de STEAM y producción de un mapa de las comunidades de las redes sociales de STEAM**

Financed by: Valve Corporation Duration: 20/05/2013 - 30/06/2013.  
Principal Investigator: Luis R. Izquierdo Millán  
Participating scientists: 4 Funding: 11.810 €

## C.5. Editorial and reviewing work

Associate Editor of the *Journal of Artificial Societies and Social Simulation* (JCR). Reviews conducted for: *Theoretical Economics, Economic Theory, Journal of Business Research, Games, American Political Science Review, Journal of Theoretical Biology, Physical Review E, SoftwareX, Journal of Mathematical Psychology, Advances in Complex Systems, Artificial Life, Mathematical Biosciences, Ecology and Society, Behavioural Processes, Environmental Modelling and Software, Simulation: Transactions of the Society for Modeling and Simulation*, etc.



## C.6. Research visits to International Research Centers (at least one month)

- Center for Control, Dynamical Systems, and Computation, UCSB (Fulbright Scholar)  
Programa de estancias de movilidad de profesores e investigadores seniores  
Santa Barbara, CA (USA) From: 7/7/2022. Duration: 3 months
- Economics Department, University of Wisconsin-Madison (Visiting Professor)  
Programa de estancias de movilidad de profesores e investigadores seniores  
Madison, WI (USA) From: 31/7/2018. Duration: 3.5 months
- Economics Department, University of Wisconsin-Madison (Visiting Professor)  
Programa de estancias de movilidad de profesores e investigadores seniores  
Madison, WI (USA) From: 2/6/2016. Duration: 4 months
- Business School, University of Western Australia (Visiting Professor)  
Perth, Australia. From: 27/10/2014. Duration: 1 month
- Business School, University of Western Australia (Visiting Professor)  
Perth, Australia. From: 3/10/2013. Duration: 1 month
- Valve Corporation (Contract art. 83)  
Seattle, WA (USA). From: 20/05/2013. Duration: 1 month
- Economics Department, European University Institute (José Castillejo grant)  
Florence, Italy. From: 01/10/2009. Duration: 10 months

## C.7. Invitations to impart postgraduate courses

- *Introducción a la Teoría de Juegos*. Universidad de Cantabria (19 June 2019)
- *Introducción al Modelado Basado en Agentes*. Universidad de Valladolid (9-11 Dec. 2015)
- *Agent-based modelling using NetLogo*. University of Western Sydney (18-19 Nov. 2014)
- *Agent-based modelling using NetLogo*. Univ. Autònoma de Barcelona (8-12 sept. 2014)
- *Complexity Winter School 2012*, course organized by *The Netherlands Organisation for Scientific Research* (NWO). Zandvoort (The Netherlands, 10-12 Dec. 2012)
- *The economy as a complex evolving system: network theory, evolutionary models and computational tools*, course organized by *DIMETIC European Doctoral School*. Maastricht (The Netherlands, 11-15 October 2010)
- *Agent-based modelling*, course organized by the Economics Department at the European University Institute. Florence (Italy, 20-27 April 2009)

## C.8. Selected Invited Lectures

- Center for Control, Dynamical Systems, and Computation at the **University of California** (Santa Barbara, USA). Seminar series 2022. 23<sup>rd</sup> September 2022.
- Economics Department at the **University of Wisconsin-Madison** (Madison, USA). Juli Plant Grainger Theory Workshops Fall 2018. 5<sup>th</sup> October 2018.
- Economics Dept. at the **Universidad Pablo de Olavide** (Seville, Spain). 23<sup>rd</sup> Jan. 2017.
- Economics Department at the **University of Wisconsin-Madison** (Madison, USA). Juli Plant Grainger Theory Workshops Fall 2016. 23<sup>rd</sup> September 2016.
- **Centre for Economic and International Studies** (University of Rome Tor Vergata, Italy). Riccardo Faini CEIS Seminars. 29<sup>th</sup> April 2016.
- Invited **keynote speaker** at Artificial Economics 2015 (Porto, Portugal). 4<sup>th</sup> Sept. 2015.
- **Business School of the University of Western Australia** (Perth, Australia). Marketing Seminar Series. 5<sup>th</sup> November 2014.
- **School of Agricultural and Resource Economics of the University of Western Australia** (Perth, Australia). Seminar Series. 11<sup>th</sup> October 2013.
- **Business School of the University of Western Australia** (Perth, Australia). Marketing Seminar Series. 7<sup>th</sup> October 2013.
- **Invited Speaker** at the 4th Workshop on Complex Networks. 13<sup>th</sup>-15<sup>th</sup> March 2013, Berlin, Germany.