Josu Doncel Vicente

Assistant Professor in the University of the Basque Country

▬▬▬ EDUCATION

2012–2015	**PhD Degree in Computer Science**, *Université de Toulouse*, France. Research carried out at LAAS-CNRS.
2010–2011	**Master Degree in Mathematical Modelling, Statistics and Computation**, *University of the Basque Country*, Spain. Research carried out at BCAM-Basque Center for Applied Mathematics
2006–2010	**Bachelors degree in Mathematics**, *University of the Basque Country*, Spain.
2003–2007	**Bachelors degree in Industrial Engineering, in Industrial Electronics**, *University of the Basque Country*, Spain. Final Project Title: "Dispositivo electrónico de control de aleatoriedad de una ruleta de casino". Advisor: J. M. Eguzkitza

▬▬▬ PhD thesis

title	*Efficiency of Distributed Queueing Games and of Path Discovery Algorithms.*
supervisors	Olivier Brun and Balakrishna J. Prabhu.
description	This thesis deals with the efficiency of distributed resource sharing algorithms and of online path discovery algorithms. In the first part of the thesis, we analyse a game in which users pay for using a shared resource. In the second part, we study the efficiency of load balancing games. In the last part of the thesis, we analyse the optimal path discovery problem in complete graphs.

▬▬▬ Master thesis

title	*Development and testing of index policies in Internet Routers.*
supervisors	Urtzi Ayesta and Peter Jacko.
description	In this thesis we address the problem of fast and fair transmission of flows in a router, which is a fundamental issue in networks like the Internet. We develop and test a new policy that can be implemented in Internet routers in order to efficiently manage the packets arriving to their buffers in order to prevent congestion of the network when users want to send too much data.

▬▬▬ Research and Teaching Positions

2017–Present	**Assistant Professor**, *University of the Basque Country (Applied Mathematics and Statistics and Operations Research Department)*, Spain.

2015–2017 **Postdoc Researcher**, *INRIA Grenoble Rhones Alpes (Polaris Team)*, France.
Hosts: Bruno Gaujal and Nicolas Gast

2015–2016 **Lecturer**, *ENSIMAG*, France.
Host: Frederic Wagner

2012–2015 **PhD Researcher**, *LAAS-CNRS (SARA Team)*, France.
Hosts: Olivier Brun and Balakrishna J. Prabhu

2013–2015 **Lecturer**, *INSA Toulouse*, France.
Host: Olivier Brun

2014–2015 **Lecturer**, *IUT Blagnac*, France.
Host: Thierry Villemur

2011–2011 **Intern Researcher**, *BCAM-Basque Center for Applied Mathematics (Networks Team)*, Spain.
Hosts: Urtzi Ayesta and Peter Jacko

2010–2011 **Researcher Staff**, *University of the Basque Country (Electronis and Electricy Department)*, Spain.
Hosts: Maria Ines Torres and Raquel Justo

Research Publications

Submitted Articles

S4 J. Doncel, S. Aalto, U. Ayesta. "Performance Degradation of Scale in Parallel-Server Systems".

S3 J. Doncel, N. Gast, B. Gaujal. "Mean-Field Games with Explicit Interactions".

S2 C. Thraves-Caro, J. Doncel, O. Brun. "Optimal Path Discovery Problem with Homogeneous Knowledge".

S1 J. Doncel, N. Gast, B. Gaujal. "A Mean-Field Games Analysis of SIR dynamics with vaccinations".

Journal Articles

J3 J. Doncel, U. Ayesta, O. Brun, B. J. Prabhu. "A Resource Sharing Game with Relative Priorities". Performance Evaluation Volume 79, September 2014.

J2 J. Doncel, U. Ayesta, O. Brun, B. Prabhu. "Is the Price of Anarchy the right measure for Load Balancing Games?". ACM Transactions on Internet Technology (ToIT) 14, 2-3, Article 18 (September 2014).

J1 K. Avratchenkov, U. Ayesta, J. Doncel, P. Jacko. "Congestion Control of TCP Flows in Internet Routers by Means of Index Policy". Computer Networks, Volume 57 Issue 17 (2013).

Refereed International Conference Papers

C5 M. Abidini, O. Boxma, J. Doncel. "Size-Based Routing to Balance Performance of the Queues". 11th EAI International Conference on Performance Evaluation Methodologies and Tools. Venice, Italy, December 2017

C4 J. Doncel, S. Aalto, U. Ayesta. "Economies of Scale in Parallel-Server Systems". IEEE Infocom 2017. Atlanta, US, May 2017.

C3   J. Doncel, U. Ayesta, O. Brun, B. J. Prabhu. "A Resource Sharing Game with Relative Priorities". IFIP Performance 2014. Torino, Italy, October 2014.

C2   H. Ben Cheikh, J. Doncel, O. Brun, B.J. Prabhu. "Predicting Response Times of Applications in Virtualized Environments". NCCA 2014, IEEE Network Cloud Computing and Applications. Rome, Italy, February 2014.

C1   J. Doncel, U. Ayesta, O. Brun, B.J. Prabhu. "On the Efficiency of Non-Cooperative Load Balancing". IFIP/TC6 Networking 2013. New York, US, May 2013.

Workshop Papers

W6   E. Anton, C. Carballo, J. Doncel, C. Gorria, E. Iriondo, M. Lezaun. "Improvement of the Contact Center Performance". European Studying Group with Industry. Bilbao, Spain, May 2017.

W5   J. Doncel, N. Gast, B. Gaujal. "Are mean-field games the limits of finite stochastic games?". Workshop on Mathematical performance Modeling and Analysis (MAMA). Antibes Juan-les-Pins, France, June 2016.

W4   J. Doncel, N. Gast, B. Gaujal. "A Mean-Field Game with Explicit Interactions for Epidemic Models". Atelier d'Evaluation de Performance. Toulouse, France, March 2016.

W3   K. Avratchenkov, U. Ayesta, J. Doncel, P. Jacko. "Optimal Congestion Control of TCP Flows in Intenet Routers". Workshop on Mathematical performance Modeling and Analysis (MAMA). London, UK, June 2012.

W2   J. Doncel, J. M. Olaso, R. Justo, V. Guijarrubia, A. Perez, M. I. Torres. "Dialogue system based on EDECAN architecture". IMPRESS 2010, Interactive Multimodal Pattern Recognition in Embedded Systems. Bilbao, Spain, September 2010.

W1   J. Doncel, J. M. Olaso, R. Justo, V. Guijarrubia, A. Perez, M. I. Torres. "Kiosko Basado en Sistema de Dialogo Multimodal." CEDI 2010. Valencia, Spain, September 2010.

Research Projects Participation

2017–Present   **Mathematical Modelling, Simulations and Industrial Applications (M2SI)**.
Funded by the Basque Gobernment.
PI: David Pardo.

2015–2017   **Quanticol**.
Funded by the European Comission.
PI: Jane Hilston.

2013–2015   **Panacea**.
Funded by the European Comission.
PI: Olivier Brun.

2012–2013   **think global Services for persOnal comPuters (SOP)** .
Funded by the French National Research Agency.
PI: Thierry Monteil.

2011-2012   **Propiedades algebraicas, analiticas y geometricas de sistemas lineales de control y matrices**.
Funded by Spanish Ministry of Science.
PI: Ion Zaballa.

2010–2011 **Multimodal Interaction in Patter Recognition and Computer Vision (MIPRCV)** .
Funded by Spanish Ministry of Science.
PI: Paco Casacuberta.

2010–2011 **Tecnologias de aprendizaje interactivo, autoevaluacion y multimodalidad en sistemas de dialogo hablado multidominio (SD-TEAM)**.
Funded by Spanish Ministry of Science.
PI: Maria Ines Torres.

Industrial Projects Participation

2017–Present **Dimensionamiento y diseño de estrategias de ruteo en un call center multinivel** .
Industrial partner: Eroski.
PI: Carlos Gorria.

2017–Present **Modelización de la gestión de programas de pagarés**.
Industrial partner: PKF Attest Debt Capital Markets.
PI: Mikel Lezaun.

Teaching Experience

2017-2018

- "Biostatistics." 1st year course of Biology, UPV/EHU.

- "Advanced Mathematics and Statistics." 1st year course of Geology, UPV/EHU.

- "Advanced Mathematics and Statistics." 1st year course of Chemistry, UPV/EHU.

- "Introduction to Numeric Methods." 2nd year course of Mathematics, UPV/EHU.

- "Applied Statistics." 2nd year course of Chemistry Engineering, UPV/EHU.

2016-2017

- "Biostatistics." 1st year course of Biotechnology, UPV/EHU.

- "Descriptive Statistics." 1st year course of Mathematics, UPV/EHU.

- "Introduction to Statistics." 1st year course of Environment Science Engineering, UPV/EHU.

2015-2016

- "Introduction to Algorithmic." 1st year course in Computer Science. ENSIMAG.

2014-2015

- "Web Programming in html." 1st year course of Networks and Telecommunication Engineering. IUT-Blagnac.

- "C Programming." 1st year course of Networks and Telecommunication Engineering. IUT-Blagnac.

- "Performance evaluation and application to networks." 5th year course of Networks and Telecommunication Engineering. INSA-Toulouse.

2013-2014

- "Introduction to Cloud Computing." 1st year course of Networks and Telecommunication Engineering. IUT-Blagnac.

- "C Programming." 1st year course of Networks and Telecommunication Engineering. IUT-Blagnac.
- "Performance evaluation and application to networks." 5th year course of Networks and Telecommunication Engineering. INSA-Toulouse.

Student Supervision

2017–2018   Jokin Labaien. Undergraduate student at UPV/EHU. **Work carried out in collaboration with the Computer Vision group of Tecnalia.**

2017–2018   Uxue Aiestaran. Undergraduate student of UPV/EHU (Spain).

2017–2018   Fernando Miguelez. Undergraduate student of UPV/EHU (Spain).

2014–2015   Irati Unzurrunzaga. Undergraduate student of UPV/EHU (Spain).

2014–2014   Anouar Aaboub. Undergraduate student of INPT (Moroco).

2014-2014   Ayoub Maouheb. Undergraduate student of ENSEEIHT, Toulouse France.

2013-2013   Raouf Harzi. Undergraduate student of Ecole Nationale des Sciences de l'Informatique, Tunisie.

Conference Presentations and Invited Talks

11/2017   *Two Approaches for the Performance Analysis of Queueing Systems: Pricing and Scaling*. Probability and Statistics Seminar. University of Pau.

11/2017   *Discrete Mean-Field Games: existence and convergence*. BCAM Scientific Seminar.

09/2017   *Two Approaches for the Performance Analysis of Queueing Systems: Pricing and Scaling*. IMDEA Networks/University Carlos III seminar.

06/2016   *Are mean-field games the limits of finite stochastic games?* Workshop on Mathematical performance Modeling and Analysis.

04/2016   *On the Convergence to a Mean-Field Equilibrium*. IMT Seminar

03/2016   *On the Convergence to a Mean-Field Equilibrium*. Atelier d'Evaluation de Performance.

09/2015   *A Mean-Field Game with Interactions for Epidemic Models*. Control Stochastique Optimal.

09/2014   *A Resource Sharing Game with Relative Priorities*. LIG/INRIA Grenoble Seminar.

07/2013   *Game Theory and Networks*. Basque Summer University.

05/2013   *On the Efficiency of Non-Cooperative Load Balancing*. IFIP/TC6 Networking Conference.

12/2012   *On the Efficiency of Non-Cooperative Load Balancing*. BCAM Seminar.

06/2012   *Congestion Control of Flows in Internet Routers by Means of Index Policies*. Stochmod Conference.

09/2010   *Dialogue system based on EDECAN architecture*. Interactive Multimodal Pattern Recognition in Embedded Systems.

09/2010   *Kiosko Basado en Sistema de Dialogo Multimodal*. CEDI 2010.

12/2016   *Economies of Scale in Parallel-Server Systems*. Eindhoven Stochastics Seminar.

Program Committee Activities

- Scalcom 2015. Beijing, China.
- Scalcom 2016. Toulouse, France.

Referee activities

International Journals

- Operations Research, 2017.
- Performance Evaluation, 2014, 2015.

International Conferences

- Cloudnet, 2014.
- Globecom, 2014.

Academic Responsabilities

2013-2014   Representative of the PhD Students of EDSYS Doctoral School.

Skills

Languages

- Basque, Spanish. Native.
- French, English. Fluid.
- Italian, Catalan. Intermediate level (currently learning).

Computer

- Mathematical software: Matlab, Mathematica, R, SPSS, Octave, Weka.
- Programming: Python, ADA, C, C++, Pascal, Fortran, html.
- Others: Latex, Office, Linux, MAC OS.