

Justo Puerto – Curriculum Vitae

Catedrático de Estadística e Investigación Operativa
Universidad de Sevilla

Synopsis:

2001 – Now Full Professor University of Seville

1998 – 2001 Associate Professor University of Seville

1996 – 1997 Professor, Universität Kaiserslautern

1992 – 1996 Associate Professor University of Seville

I declare that I am aware that this curriculum vitae will be published on the institutional website of the University, in the "Transparent Administration" section, in the manner and for the duration provided for by Legislative Decree no. 33/2013, art. 15.

Overview

Justo Puerto got his PhD from the University of Seville in 1990. He is full professor of the Departamento de Estadística e Investigación Operativa (Statistics and Operations Research) of the Universidad de Sevilla. He has been visiting professor at the universities of NorthWestern (USA), Kaiserslautern (Germany), Bolonia and Rome (Italy), among others and has been invited to short to medium research stays in universities all around the world (Cambridge, Brussels, Saint Petersburg, Trento, Hirosaki, Karlsruhe, ...) and to prestigious research centers as Oberwolfach (Germany), Newton Institute (Great Britain), Banff International Research Station (Canada) and Centro Matemático Oaxaca (CMO, México). He was promotor and cofounder of the Mathematical Research Institute of the University of Seville (IMUS) and his Secretary during the period 2007-2015. During the period 2010-2016 was also the chairman of the Doctorate program in Mathematics of the University of Sevilla. Since 1993 he has conducted as principal investigator (without interruptions) seven research projects of the Spanish National Research Plan and one European project within the IV Framework program, funded with more than one million euros. In addition, he was the principal investigator of the Spanish network on Multicriteria Analysis for a three years period and also got several funded projects within the program of Acciones Integradas with Germany and Italy.

He has also lot of experience in organizing research and training activities, to mention a few, has been the organizer of the successful Sevillian workshops on Mixed Integer Nonlinear program (2010, 2015), one thematic period on Optimization at IMUS, one international school in collaborations with the Mathematical Science Research Institute (MSRI in 2016) and several workshops and seminars on different topics. He is also regular member of different scientific committees in international conferences as EWGLA, ISOLDE, etc.; he has given plenary talks at different prestigious international conferences and has been semi-plenary speaker in the meeting of RSME 2017.

Dr. Justo Puerto research fields of expertise include discrete and multiobjective optimization, location theory and game theory. In the recent years he has also specialized on the analysis and optimization of large scale complex networks and data science. Currently, his group is

making contributions in the combination of techniques and tools of complex networks to standard models in data science. He has supervised 17 PhD thesis (some of them in cotutelle with international universities), has written 4 books and he has published more than 180 research papers in specialized journal in the JCR index list. Dr. Puerto belongs to several journal editorial boards as Computers and Operations Research, Discrete Optimization and TOP. He was coeditor-in-chief of TOP (the international journal of Operations Research of the Spanish Society for Statistics and O.R. -SEIO-). He has also served during two terms as active member of the executive and academic committees of SEIO. His interest in bringing mathematical knowledge to the industry and society has led him to also collaborate and conduct industrial projects funded by corporations and the European Union. In 2021, he receives the SEIO medal by his contributions to the development of O.R. In 2022, he has been awarded with the SEIO-FBBVA award for the best Methodological contribution in Operational Research by the paper “*REVISITING K-SUM OPTIMIZATION*”.

Scopus: h-index 29 – 2957 citations.

Google Scholar : h-index 40 – 5709 citations.

More information: <http://grupo.us.es/gpb97/>

Leadership of research projects and groups

Justo Puerto is a prolific researcher, with about two hundred publications in the field of Statistics and Operations Research yielding more than 2600 citations in SCOPUS/Web of Science (and 5300 in Scholar Google), with more than 100 co-authors and a h-index of 28. His broad research interests are embodied in different areas such as Decision theory, game theory, location analysis and logistics, machine learning, mixed integer nonlinear programming ... with a methodological, theoretical and an applied perspective, yielding relevant contributions in logistics, and industrial applications. These records are not living in the past and he is currently very active reporting more than 10 publications in 2021 (SCOPUS).

Justo Puerto is the main researcher of the group “Enfoques no estándares en análisis de datos, redes complejas, modelos estadísticos y optimización” that has been recognized by the regional government of Andalusia as a “outstanding research group” since 2010. He has been also the PI (or Co-PI) of competitive projects, funded by European, regional and national authorities. An overview of his projects, since his first one “Problemas de localización-rutas con demanda regional PB93-0927” back in 1993 to the last one “Complex Networks meet data science” (Fundación BBVA) in 2020, provides an idea of the evolution of the Operations Research in Spain in the last 30 years and gives an idea of his influence on this topic.

Training and teaching

Justo Puerto is an excellent professor. He has been lecturing at the Degree in Mathematics in the University of Sevilla during all his career, not only in advanced subjects, but also in basic courses of introductory probability and mathematical programming. His passion for the operations research is transmitted to his students, who found in one of their most renowned professors a selfless teacher, always willing to answer their questions and guide them. His door is always open for students.

In addition, he is entirely convinced about the importance of training the new generations for guaranteeing the development of science, and he has worked hard on this from different areas. He was the promotor of the PhD program Mathematics 10 years ago, which obtained the “excellence distinction” by the Ministry of Science and Education, joining forces among all the areas of mathematics in the Universidad de Sevilla in common project for improving the quality of research in the field. From 2009 until 2016, he was the coordinator of this PhD program in Mathematics. His commitment with the training and education of young scientists has led him to organize prestigious international doc-courses at IMUS (Instituto Universitario de Investigación Matemática de la Universidad de Sevilla), as well as one joint summer school on “Mixed Integer Non-linear programming 2016” with the MSRI (Mathematical Science Research Institute Berkeley).

Another remarkable aspect about his training capacity is the number of PhD theses he has (co)advised during his career: 20 young researchers in operations research got their PhDs under his supervision up to now. Some of his students are already full professors (in different universities) and have themselves reached outstanding positions in different areas such as location theory, decision analysis, mathematical programming or regret optimization, having some of them occupied important scientific and management positions, always with his support. These 20 PhD theses have given rise to about 100 JCR. Publications, that summed up to book chapters, result in a remarkable background. Being supervised by him is a guarantee to get a position in any university or in the industrial sector.

Knowledge transfer to society

Justo Puerto is not only been an active researcher, but he has also devoted some efforts to the transfer of knowledge to society. First, he has collaborated with practitioners and scientists from other areas, such as Statistics, Economics, Medicine, Engineering, Computer Science ..., fulfilling a compromise with transfer of knowledge to other fields. But he has also been remarkably active in transferring knowledge to the industrial sector.

For more than 15 years, he has been collaborating with different companies as Cámara de Comercio de Sevilla, AXA Seguros, MetroLab, Ghenova, among others. He has also led projects with the regional Administration. And as an outstanding achievement, Justo took part as a promotor in the establishment of the Instituto de Investigación Matemática de la Universidad de Sevilla (IMUS) developing there the knowledge transfer of mathematics to industry and society.

International projection

Justo Puerto has established and consolidated a broad international network of collaborators, both in Europe, Israel, Latin America and the US, as can be seen from the group of his co-authors. He was cochair of ...

Along his career, he has participated in about 400 conferences, many of them international and as an invited and plenary speaker. And he has been also quite active organizing scientific meetings. In the last ten years, he has been an (co-)organizer of the 1st (Sevilla, 2010) and 2nd

(Sevilla, 2015) International Workshop on Mixed-Integer Nonlinear programming, the OR Peripatetic Post-Graduate Programme (Cádiz 2010), IWOLOCA 2020, ...

No need to say that he has lectured in several universities for MSc and PhD programs and he has also given seminars all over Spain, Europe, Latin America and the US.

Awards

SEIO-FBBVA Medal 2021 for his contributions to the advance of Operations Research.

SEIO-FBBVA best paper award 2022 for Methodological contribution in Operational Research.

Service to the OR community.

He was actively involved in the Spanish Society of Statistics and OR, he is a member of EURO, ISOLDE and the Euro-Working Group of Locational Analysis.

He was the Editor of TOP (2007-2012) and Associate Editor in different international journals (TOP (2001-2007, 2013-), Computers and OR (2007-), Discrete Optimization (2010-), Mathematics (2020-). OR-Perspectives (2014-), and Computational Optimization and Applications (2021-).

Institutional responsibilities

- 2008 – 2015 Secretary of the Institute of Mathematics of the University of Seville. Seville (Spain)
- 2010 – 2016 Chairman of the Doctorate program in Mathematics of the University of Seville. Seville, Spain.
- 2018 - ... Coordinator of the Institute Andaluz de Investigación Matemática.
- 2021 - ... Director of the Institute of Mathematics of the University of Seville. Seville (Spain)

Ten representative publications (Last ten years)

Ten representative publications of the last ten years are the following:

- 1 Scientific paper. Julio González Díaz; Brais González Rodríguez; Marina Leal Palazón; 0000-0003-4079-8419. (4/4). 2021. Global optimization for bilevel portfolio design: Economic insights from the Dow Jones index OMEGA. Elsevier. 102, pp.102353. ISSN 0305-0483.
- 2 Scientific paper. Blanco, Víctor; Puerto-Albandoz, Justo; Rodríguez-Chia, Antonio Manuel. "On lp-support vector machines and multidimensional kernels." . Journal of Machine Learning Research Vol 92 (2020).

- 3 Scientific paper. 0000-0003-4119-6006; 0000-0001-7471-2308; 0000-0003-3380-6601; 0000-0003-4079-8419. 2020. A Branch-Price-and-Cut Procedure for the Discrete Ordered Median Problem *INFORMS Journal on Computing*. INFORMS. 32-3, pp.582-599.
- 4 Scientific paper. 0000-0002-1928-5224; Fernando López Blazquez; 0000-0003-4079-8419. 2019. A stochastic approach to approximate values in cooperative games *European Journal of Operational Research*. Elsevier219. 219-1, pp.93-106.
- 5 Scientific paper. Lina Mallozzi; 0000-0003-4079-8419; Moises Rodriguez Madrena. 2019. On location-allocation problems for dimensional facilities *Journal of Optimization Theory and Applications*. Springer. 182-2, pp.730-767.
- 6 Scientific paper. Puerto-Albandoz, Justo; Perea-Rojas Marcos, Federico. 2018. On minimax and Pareto optimal security payoffs in multicriteria games *Journal of Mathematical Analysis and Applications*. 457-2, pp.1634-1648.
- 7 Scientific paper. Benati, Stefano; Puerto-Albandoz, Justo; Rodriguez-Chia, Antonio Manuel. 2017. Clustering data that are graph connected *European Journal Of Operational Research*. 261-1, pp.43-53.
- 8 Scientific paper. Blanco, Victor; Puerto-Albandoz, Justo; Ponce-López, Diego. 2017. Continuous location under the effect of refraction *Mathematical Programming, Series B*. 161-1, pp.33-72.
- 9 Scientific paper. Puerto-Albandoz, Justo; Rodriguez-Chia, Antonio Manuel; Tamir, Arie. 2017. Revisiting k-sum Optimization *Mathematical Programming, Series B*. 165-2, pp.579-604.
- 10 Scientific paper. Blanco-, Victor; Puerto-Albandoz, Justo. 2015. Short rational generating functions for solving some families of fuzzy integer programming problems *Fuzzy Sets And Systems*. 272-1, pp.30-46.

Research Funds (Last ten years)

Some of the most representative projects of the last ten years are the following:

- 1 Project. Complex networks meet data science. Fundación BBVA. Justo Puerto Albandoz. (Instituto de Matematicas de la Universidad de Sevilla (IMUS)). 01/05/202030/04/2022. 99.583 €.
- 2 Project. Nuevos resultados sobre los problemas de diseño y optimización en redes complejas: Aplicaciones al diseño de ciudades inteligentes. Junta de Andalucía. Justo Puerto Albandoz. (Universidad de Sevilla). 01/02/2020-31/01/2022. 75.500 €.
- 3 Project. MTM2016-74983-C2-1-R, Nuevos Desafíos Matemáticos en Problemas Logísticos y de Transporte Integrado Sobre Redes Complejas: Diseño y Optimización. (Universidad de Sevilla). 01/01/2017-29/12/2020. 140.600 €. Principal investigator.
- 4 Project. MTM2013-46962-C2-1-P, Desafíos Matemáticos en el Diseño y Optimización de Redes Complejas: Aplicaciones.. Ministerio de Economía y Competitividad. JUSTO PUERTO ALBANDOZ. From 01/01/2014. 98.812,5 €.
- 5 Project. P11-SEJ-7782, UNA APROXIMACIÓN MULTI-OBJETIVO A LOS PROBLEMAS DE LOGÍSTICA: DISEÑO DEL SISTEMA DE RECOGIDA DE RESIDUOS URBANOS Y PROBLEMAS DE RUTAS. (ANTIGUA)CONSEJERIA DE ECONOMIA, INNOVACION Y CIENCIA. MIGUEL ÁNGEL HINOJOSA RAMOS. From 27/02/2013. 82.851,75 €.
- 6 Project. Nuevos Desafios de la Matemática Combinatoria: Enfoques no Estandares en Optimización Discreta y Álgebra Computacional. Aplicaciones. JUNTA DE ANDALUCIA. JUSTO PUERTO ALBANDOZ. From 15/03/2011. 254.752 €.
- 7 Project. MTM2010-19576-C02-01, DISEÑO OPTIMO EN REDES LOGISTICAS. Ministerio de Ciencia e Innovación. JUSTO PUERTO ALBANDOZ. From 01/01/2011. 80.527 €. Principal investigator.

- 8 Project. DISTRIBUTION SYSTEMS DESIGN WITH ROLE DEPENDENT OBJECTIVES. PROGRAMA DE COOPERACIÓN INTERNACIONAL (ACCIONES INTEGRADAS), MINISTERIO DE EDUCACIÓN Y CIENCIA. ANTONIO MANUEL RODRIGUEZ CHIA. From 01/01/2010. 11.000 €.
- 9 Contract. Intelligent System for Automatic Routing in Accomodation Deks by Numerical Analysis: ARIADNA II Justo Puerto. 04/03/2019-04/01/2020. 35.000 €.
- 10 Contract. Diseño e implementación de modelos matemáticos para la planificación de la oferta educativa de formación profesional en centros de Andalucía Junta de Andalucía. Justo Puerto Albandoz. 01/01/2018-01/08/2018. 12.000 €.
- 11 Contract. ARIADNA-Análisis de algoritmos para el diseño eficiente de redes de canalizaciones. Ghenova Ingeniería. JUSTO PUERTO ALBANDOZ. 01/07/201530/10/2016. 136.730 €.
- 12 Contract. OPTIMAL METRO LINE AND OPERATION (METROLAB S.A.) Metrolab S.A.. 01/03/2013-01/09/2013. 36.600 €.
- 13 Contract. REALIZACIÓN DE ACTIVIDADES DENTRO DEL PROYECTO CONSOLIDER "INGENIO MATHEMATICA" (CSD2006-00032) LUIS NARVAEZ MACARRO. 29/01/201031/12/2010. 39.518 €.

Justo Puerto Albandoz