

Aurora González Vidal

Curriculum Vitae

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Personal Information

Born January 18th, 1992 at Murcia (Spain)
Address Calle Molino, 21, 1°. Alhama de Murcia 30840, Murcia, Spain
Citizenship Spanish
Driving Lic. B

Academic Education

2015 – **Ph.D. on Computer Sciences**, *University of Murcia*, Murcia, Spain.
currently Data Analytics in Smart Buildings for Energy Efficiency
Feb – June, **Ph.D internship, ISSNIP**, *University of Melbourne*, Melbourne, Australia.
2018 Study of missing data imputation in smart cities / IoT scenarios
2015 – 2017 **University Master's Degree in Big Data: Massive Data Analysis Technologies**, *University of Murcia*, University of Santiago de Compostela, España. 60 ECTS .
July – Nov, **Ph.D internship**, *Institute for Communication Systems, University of Surrey*, Guildford, UK.
2016 Development of time series segmentation models
June, 2016 **Summer School: Dynamic Calculation Methods for Building Energy Assessment**, *DYNASTEE-INIVE*, *CITIES: The Centre for IT-Intelligent Energy Systems*, Civil Engineering School (University of Granada, Spain).
Linear transfer function and state-space models, simulation and prediction using R. 2.5 ECTS
2014 – 2015 **University Master's Degree in Training of Secondary, Professional, and Language Teachers. Speciality: Mathematics**, *Universidad Miguel Hernández de Elche*, Spain.
Semi-presential learning. 60 ECTS
2012 – 2013 **Erasmus Program, Third year of the Degree in Mathematics**, *Vrije Universiteit Brussels*, Brussels, Belgium.
2010 – 2014 **Degree in Mathematics**, *University of Murcia*, Murcia, Spain.
4 years Degree in Mathematical Sciences (240 ECTS). Overall mark: 7.14. Final degree project (12 ECTS): *Constant mean curvature surfaces. Delaunay surfaces*, mark: 9.8.

Complementary Education

2017 **MOOC: Exploratory Multivariate Data Analysis**, *FUN MOOC*.
Study of principal component analysis (PCA) when variables are quantitative, correspondence analysis (CA) and multiple correspondence analysis (MCA) when variables are categorical and clustering.
2015 **MOOC: R Programming**, *Coursera*, John Hopkins University.
Reading data into R, writing functions and several programming issues.
2015 **MOOC: Reproducible Research**, *Coursera*, John Hopkins University.
Concepts and tools for reporting modern data analyses in a reproducible manner (rmarkdown, knitr).
2014 **MOOC: Statistical Learning**, *OpenEdx*, Stanford University.
Classification, resampling methods, tree-based methods..., etc. with R
2012 **Stock market investment course**, *University Asociation (ASUFI)*, Economy and Industry Faculty, University of Murcia.

Research activity

Articles

- 2019 **A Methodology for Energy Multivariate Time Series Forecasting in Smart Buildings Based on Feature Selection** , Aurora González-Vidal, Fernando Jiménez, Antonio Skarmeta, Energy and Buildings, DOI: 10.1016/j.enbuild.2019.05.021Get rights and content .
- 2018 **Commissioning of the Controlled and Automatized Testing Facility for Human Behavior and Control (CASITA)** , Ignacio Rodríguez-Rodríguez, Aurora González-Vidal, Alfonso P. Ramallo-González, Miguel Ángel Zamora, Sensors 2018, 18(9), 2829, DOI: doi:10.3390/s18092829.
- 2018 **BEATS: Blocks of Eigenvalues Algorithm for Time series Segmentation**, Aurora González-Vidal, Payam Barnaghi, Antonio F. Skarmeta, IEEE Transactions on (Early Access) , DOI: 10.1109/tkde.2018.2817229.
- 2017 **An open IoT platform for the management and analysis of energy data**, Fernando Terroso-Saenz, Aurora González-Vidal, Alfonso P. Ramallo-González, Antonio F Skarmeta, Future Generation Computer Systems, DOI: doi:10.1016/j.future.2017.08.046.
- 2017 **Providing Personalized Energy Management and Awareness Services for Energy Efficiency in Smart Buildings**, Eleni Fotopoulou, Anastasios Zafeiropoulos, Fernando Terroso-Sáenz, Umutcan Şimşek, Aurora González-Vidal, George Tsiolis, Panagiotis Gouvas, Paris Liapis, Anna Fensel, Antonio Skarmeta, Sensors 17 (9), 2054, DOI: 10.3390/s17092054.
- 2016 **Applicability of Big Data Techniques to Smart Cities Deployments**, M. Victoria Moreno, Fernando Terroso-Sáenz, Aurora González-Vidal, Mercedes Valdes-Vela, Antonio F. Skarmeta, Miguel A. Zamora-Izquierdo, Victor Chang , IEEE Transactions on Industrial Informatics (Volume: PP, Issue: 99) , DOI: 10.1109/TII.2016.2605581.
- 2016 **Towards Energy Efficiency Smart Buildings Models based on Intelligent Data Analytics**, Aurora González-Vidal, Victoria Moreno-Cano, Fernando Terroso-Sáenz, Antonio F. Skarmeta, Procedia Computer Science (2016) pp. 994-999, DOI: 10.1016/j.procs.2016.04.213.
- 2016 **Towards Anticipate detection of Complex Event Processing rules with probabilistic modelling**, Fernando Terroso-Sáenz, Aurora González-Vidal, Antonio F. Skarmeta, Internat. Journal of Design & Nature and Ecodynamics, DOI: 10.2495/DNE-V11-N3-275-283.
- 2016 **Human Mobility Prediction based on Social Media with Complex Event Processing**, Fernando Terroso-Saenz, Jesus Cuenca-Jara, Aurora González-Vidal and Antonio F. Skarmeta, International Journal of Distributed Sensor Networks, DOI: 10.1177/155014775836392.
- 2016 **Human Mobility Modelling Based on Dense Transit Areas Detection with Opportunistic Sensing**, Fernando Terroso-Saenz, Mercedes Valdés-Vela, Aurora González-Vidal and Antonio F. Skarmeta, Mobile Information Systems, DOI: 10.1155/2016/9178539.

Book chapters

- 2016 **Chapter 7. Data Analytics in Smart Buildings**, Victoria Moreno, Fernando Terroso-Saenz, Aurora González-Vidal and Antonio F. Skarmeta, Building Blocks for IoT Analytics edited by John Soldatos, Rivers publishers p.167-206.

European Projects

- 2018 – **IoT-Crawler**.
currently IoTcrawler aims to create a search engine for Internet of Things devices, making real-world data accessible and actionable in a secure and privacy-concerned manner
- 2015 – 2019 **ENTROPY**.
The project aims to design and deploy an innovative IT ecosystem targeting at improving energy efficiency through consumers understanding, engagement and behavioural changes

Conferences participation and publications

Communication and IoT

- 2019 **IoT for Water Management: Towards Intelligent Anomaly Detection**, Gonzalez-Vidal,A., Cuenca-Jara, Skarmeta,Antonio F., Limerick, Ireland, 2019 IEEE 5th World Forum on Internet of Things .

- 2018 **Empirical Study of Massive Set-Point Behavioral Data: Towards a Cloud-Based Artificial Intelligence that Democratizes Thermostats**, *Aurora González-Vidal, Alfonso P Ramallo-González, Antonio Skarmeta*, Sicily, Italy, SMARTCOMP 2018: 4th IEEE International Conference on Smart Computing.
- 2018 **Machine Learning Based Electric Load Forecasting for Short and Long-term Period**, *T. Vantuch, A. González-Vidal, A. P. Ramallo-González, A. F. Skarmeta, S. Misak*, Singapore, 2018 IEEE 4th World Forum on Internet of Things (WF-IoT).
- 2017 **Data driven modeling for energy consumption prediction in smart buildings**, *A. González-Vidal, A. P. Ramallo-González, F. Terroso-Sáenz, A. F. Skarmeta*, Boston, USA, Big Data Analytics for Internet of Things (BDA-IoT) Workshop; 2017 IEEE International Conference on Big Data.
- 2017 **An Open Architecture for IoT Data Analytics in Smart Cities**, *F. Terroso-Sáenz, A. González-Vidal, Jesús Cuenca, Antonio F. Skarmeta*, Cape Town, South Africa, Global Wireless Summit (GWS) 2017.
- 2017 **Human mobility analysis based on social media and fuzzy clustering**, *Jesus Cuenca-Jara, Fernando Terroso-Saenz, Mercedes Valdes-Vela, Aurora Gonzalez-Vidal, Antonio F Skarmeta*, Geneva, Switzerland, 2017 Global Internet of Things Summit (GIoTS).
- 2017 **Data Aggregation, Fusion and Recommendations for Strengthening Citizens Energy-aware Behavioural Profiles**, *E. Fotopoulou, A. Zafeiropoulos, F. Terroso-Sáenz, A. González-Vidal, A. F. Skarmeta, U. Şimşek, A. Fensel*, Geneva, Switzerland, 2017 Global Internet of Things Summit (GIoTS).
- 2017 **Poster: Herramienta de análisis de datos interactiva para edificios inteligentes**, *Aurora González-Vidal, Fernando Terroso-Sáenz, Antonio F. Skarmeta*, Palma de Mallorca, Spain, ACM celebrations: Informatica para tod@s.
- 2016 **Model-free Approach based on IoT Data Analytics for Energy Efficiency in Smart Environments**, *Aurora González-Vidal, Victoria Moreno-Cano, Antonio F. Skarmeta*, Athens, Greece, European Conference on Networks and Communications.
- 2016 **Internet de las cosas y gamificación aplicados a eficiencia energética en edificios**, *Fernando Terroso-Sáenz, Victoria Moreno-Cano, Aurora González-Vidal, Miguel Ángel Zamora-Izquierdo, Antonio F. Skarmeta*, Madrid, Spain, III Congreso Edificios Energía Casi Nula 2016. Digital Article: Libro de Comunicaciones del III Congreso Edificios Energía Casi Nula
- 2016 **Towards Energy Efficiency Smart Buildings Models based on Intelligent Data Analytics**, *Aurora González-Vidal, Victoria Moreno-Cano, Fernando Terroso-Sáenz, Antonio F. Skarmeta*, Madrid (Spain), The II International Workshop on Big Data and Data Mining Challenges on IoT and Pervasive Systems (BigD2M 2016).
- 2016 **Towards anticipate detection of Complex Event Processing rules with probabilistic modelling**, *Fernando Terroso-Sáenz, Aurora González-Vidal, Antonio F. Skarmeta*, Alicante (Spain), Big Data 2016.
- Other fields**
- 2016 **VII Congress of R users**, *Albacete*, Spain. Presentation of the SAIC50 tool (shiny R package): <http://gauss.inf.um.es:8080/IC50/>
- 2016 **Classification of Parent Attitudes about Childhood Vaccines using Machine Learning Techniques**, *L. del Río, A. Maurandi-López, J. A. Palazón, Aurora González-Vidal, M.D. Pérez-Cárcele*, Amsterdam, Greece, 10th Vaccine Congress.
- 2015 **Chlamydiosis in wild birds, assessing sample preservation as a limiting factor for molecular diagnosis**, *Del Río et al.*, Maisons-Alfort (France), 4th European Meeting on Animal Chlamydiosis. Statistical consulting (poster) .
- 2014 **Learning how to learn mathematics from school with R**, *IX Congress of Mathematical Education*, Murcia, *A. González Vidal, A. Maurandi López and J. A. Palazón Ferrando*.
- 2014 **VI Congress of R users**, *Santiago de Compostela*, Galicia, Spain. Attendee .

Conference organization and other merits

- 2017- currently **President of the Association of R users in Murcia**, *The objective is to promote the knowledge of R programming and the development of the analyst profession in all aspects: research, teaching and business*, Murcia. Spain, Amibt: Regional.
- 2018 (currently) **Xjur: X Congress of R users**, *Organising and Academic Committee*, Murcia. Spain, Amibt: National.
- 2018) **DATALEB18: 1st Internation Conference on Data for Low-Energy Buildings**, *Technical Committee*, University of Murcia. Spain, Amibt: International.

Experience

Working

- 23/11/2015 – currently **Predocrator contract for training doctors (FPI)**, *University of Murcia*, Ministry of Economy and Competitiveness of Spain.
National Project: Emerging Dynamic Intelligence on Smart Cities Services based on IoT technologies (EDISON).
- 2014 – 2015 **Grant Holder**, *Statistical Support Service University at Murcia*, Research Support Services (SAI), Spain. Statistical consultant, experiment designer, statistical analysis and results interpretation.

Accademic

- 2013 – 2014 **Trainee student**, *Statistical Support Service University of Murcia*, Research Support Services. SAIC50 Project: Web app so as to compute the half maximal inhibitory concentration (IC50) using regression techniques. <http://gauss.inf.um.es:8080/IC50/>. Mark: 10 with honors.
- 2011 – 2012 **Intern Student in the Department of Statistics and Operational Research**, *University of Murcia*, Murcia, Writting a manual with solved examples of optimization problems using *Xpress* .

Teaching

- 2019 **Machine learning introduction for researchers**, *University of Murcia*, Centro de Formación y Desarrollo Profesional de la Universidad de Murcia, Spain. Introduction to machine learning models for full and associate proffesors of Computer Science. .
- 2019 **Machine learning summer school for last year high school students**, *University of Murcia*, Murcia, Spain. Introduction to machine learning models using Scratch for training a pac-man game .
- 2018 **R4U: Introduction to R in university environment**, *University of Murcia*, Murcia, Spain. This course presents a work methodology using R for all university personnel: information management, automatization of processes, optimisation and time management and also analysis results communication .
- 2015 **Experimental design and data analysis fundamentals course**, *University of Murcia*, Murcia, Spain. Course organized by the School of Doctoral programmes of the University of Murcia .
- 2014 **Statistical fundations for research. Introduccion to R**, *University of Murcia*, Spain. Course directed towards Ph.D. students and researchers on experimental, biomedical and social sciences.
- 2014 **Workshop: Shiny. Interactive web applications with R**, *Accesible and free knowlewdge form the University of Murcia (Caldum)*, Murcia, Spain.

Languages

Spanish (mother tongue), English (Certificate in Advanced English. Demonstrated ability at Level C2), French (pre-intermediate).

Computer Skills

- Languages R, Python, Bash Scripting
- Platforms Linux (Ubuntu, Mint, Fedora, Debian), Unix, Windows (XP, Windows 7,8,10).
- Tools R, Rstudio, GIT, SPSS, PyCharm, L^AT_EX, Pentaho, Matlab, wxMaxima, Pandoc, Markdown, Shiny.

Interests and Hobbies

In addition to mathematics, statistics and their applications, informatics, scientific disclosure and take care of the environment I also enjoy music (playing saxophone), sports (I play squash, I used to do athletics and now I am an athletics judge) and literature (two of my favourite writers are Haruki Murakami and Hermann Hesse).