Adán JOSÉ-GARCÍA

- Mexican
- Coffee farmer
- 34 years

Contact

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Publications

Total	19
JCR journals	7
Other journals	1
Chapter books	1
Conferences	10

Profile

Doctor in computer science with five years of experience in management, teaching, and research in Mexico, the United Kingdom, and France.

My main research involves studying, adapting, and creating unsupervised machine learning methods and their applications to different research fields such as digital healthcare, labour market, network analysis.

I have abilities to write scientific articles, supervise students, management of research-oriented projects, and work with multidisciplinary research teams. Additionally, I am a member of the Mexican National System of Researchers, Level I (levels: C, I, II, and III), Conacyt, Mexico.

Academic Degrees

Doctor in Computer Science — **2013 - 2017**
Cinvestav-IPN, Mexico

Master in Computer Science — **2010 - 2012**
CCinvestav-IPN, Mexico

Bachelor of Engineering — **2005 - 2010**
Technological Institute of Culiacan, Mexico

Professional Experience

Postdoctoral Research in Digital Health — **03/2021 - today**
Department of Computer Science, CRIStAL Lab
University of Lille, France

The development of biclustering methods for analysing systemic sclerosis patients' digital health records to better understand disease complications and treatment goals.

Postdoctoral Research in Machine Learning — **11/2019 - 03/2021**
Department of Computer Science,
University of Exeter, United Kingdom

Develop a career guidance system (C3-IoC) for assessing student skills using a range of machine learning techniques, including identifying job role communities in networks using clustering techniques.

Postdoctoral Research in Unsupervised Learning — **01/2018 - 10/2020**
Alliance Manchester Business School
University of Manchester, United Kingdom

Development of a clustering approach for multi-view data problems (MVMC), which can integrate multiple data sources (views) and determine consensus clusters supported across the data views. MVMC was applied to classify breast lesions on ultrasound images.

Languages

Spanish Native

English Advanced

French Beginner

Part-time Lecturer in Digital Technologies 08/2017 - 07/2018
Teacher Training and Educational Research
CRETAM, Mexico

Teaching activities as a principal lecturer on the modules *Online Productivity Tools for Education* and *Digital Technologies for Education*.

Software Engineering Team Leader 09/2012 - 10/2013
SVAM International, Mexico

Supervised the construction of a software product for a national beer company. The main modules of the system are in-store and en-route point-of-sale systems, inventory, and user management.

Publications in Peer-Reviewed International Journals

1. **A. José-García** and J. Handl. *What's in a distance? – Exploring the interplay between distance measures and internal cluster validity in multi-objective clustering.* Natural Computing Journal, 2022 | `in press`
2. **A. José-García**, R. Everson, et al. *C3-IoC: A career guidance system for assessing student skills using machine learning and network visualisation.* International Journal of Artificial Intelligence in Education, 2022 | `minor revision`
3. **A. José-García**, J. Handl, W. Gómez-Flores, and M. Garza-Fabre. *An evolutionary many-objective approach to multiview data clustering*. Applied Soft Computing, 2021 | DOI: j.asoc.2021.107425
4. A. Ezugwu, A. Shukla, **A. José-García**, et al. *Automatic Clustering Algorithms: A systematic review and bibliometric analysis of relevant literature*. Neural Computing and Applications, 2021 | DOI: s00521-020-05395-4
5. A. Siegmund, B. Fu, **A. José-García**, et al. *Study and research on detection of fiber defects using keypoints and deep learning*. International Journal of Pattern Recognition and Artificial Intelligence, 2020 | DOI: S0218001421500166
6. **A. José-García** and W. Gómez-Flores. *Automatic clustering using nature-inspired metaheuristics: A survey*. Applied Soft Computing, 2016 | DOI: j.asoc.2015.12.001
7. **A. José-García**, I. Lopez-Arevalo, and V. J. Sosa-Sosa. *A rule-based approach for topic maps learning from relational databases*. Expert Systems, 2015 | DOI: exsy.12113

Publications in Other Journals

- W. Gómez-Flores and **A. José-García**. *Una panorámica al agrupamiento de datos y sus aplicaciones.* In *Avances en Ingeniería y Tecnologías Computacionales*. Cinvestav Unidad Tamaulipas, Mexico, 2022, ISBN: 978-607-9023-65-2. | DOI: arXiv:2203.16241

Publications as Chapter Books

- **A. José-García**, J. Jacques, V. Sobanski, and C. Dhaenens. *Biclustering algorithms based on metaheuristics: A review.* In book: *Metaheuristics for Machine Learning: New Advances and Tools*, Edited by: Mansour Eddaly, Bassem Jarboui, Patrick Siarry, 2022 | DOI: arXiv:2203.16241

Publications in International Conference Proceedings

1. **A. José-García**, W. Gómez-Flores. A survey of cluster validity indices for automatic data clustering using differential evolution. In *"GECCO'21: The International Conference on Genetic and Evolutionary Computation"*, p. 314–322, 2021.
2. **A. José-García**, J. Handl. On the interaction between distance functions and clustering criteria in multi-objective clustering. In *"EMO 2021: The International Conference on Evolutionary Multi-Criterion Optimization"*, p. 504–515, 2021.
3. **A. José-García**, J. Handl, W. Gómez-Flores, M. Garza-Fabre. Many-view clustering: An illustration using multiple dissimilarity measures. In *"GECCO'19: The International Conference on Genetic and Evolutionary Computation"*, p. 213–214, 2019.

4. **A. José-García**, W. Gómez-Flores. Evolutionary clustering using multi-prototype representation and connectivity criterion. In *"MCPR'17: The Mexican Conference on Pattern Recognition"*, p. 63–73, 2017.
5. **A. José-García**, I. Lopez-Arevalo, V. J. Sosa-Sosa. Building topic maps from relational databases. In *"CCE'12: The International Conference on Electrical Engineering, Computing Science and Automatic Control"*, p. 294–299, 2012.
6. **A. José-García**, H. Romero-Monsivais, C. Hernández, A. Rodríguez-Cristerna, I. Rivera-Islas, J. Torres-Jiménez. A simulated annealing algorithm for the problem of minimal addition chains. In *"EPIA'11: The Portuguese Conference on Artificial Intelligence"*, p. 311–325, 2011.
7. A. Rodríguez-Cristerna, J. Torres-Jiménez, H. Romero-Monsivais, C. Hernández, I. Rivera-Islas, **A. José-García**. A mutation-selection algorithm for the problem of minimum Brauer chains. In *"MICAI'11: The Mexican International Conference on Artificial Intelligence"*, p. 107–118, 2011.
8. R. Zataraín-Cabada, M. L. Barrón-Estrada, V. Ponce Angulo, **A. José-García**. A framework for creating, training, and testing self-organizing maps for recognizing learning styles. In *"Edutainment'10: The International Conference on E-learning and Games"*, p. 53–64, 2010.
9. R. Zataraín-Cabada, M. L. Barrón-Estrada, V. Ponce Angulo, **A. José-García**, C. A. Reyes García. Identification of Felder-Silverman learning styles with a supervised neural network. In *"ICIC'10: The International Conference on Intelligent Computing"*, p. 479–486, 2010.
10. R. Zataraín-Cabada, M. L. Barrón-Estrada, V. Ponce Angulo, **A. José-García**, C. A. Reyes García. A learning social network with recognition of learning styles using neural networks. In *"MCPR'10: The Mexican Conference on Pattern Recognition"*, p. 199–209, 2010.

Software Publicly Available

- **CVIK**: A cluster validity index toolbox for automatic determination of the number of clusters
  `https://github.com/adanjoga/cvik-toolbox`
- **MVMC**: An evolutionary many-objective approach to multiview clustering using feature and relational data
  `https://github.com/adanjoga/mvmc`

Management and Supervision of Projects

- **An AI-based Career Guidance System for Assessing Student Skills (`C3-IoC`)** | Research project
  Nov 2019 – March 2021 | University of Exeter, United Kingdom
  Team: Academic researchers and IBM developers
- **A Cognitive Behavioural Therapy Mobile Application (`CBT App`)** | Undergraduate student project
  Sep 2020 – Jan 2021 | IoC Student Enterprise, University of Exeter, United Kingdom
  Students: Brian Evans and James Bradford
- **A Telematics Driving Behaviour Mobile Application (`TEL App`)** | Undergraduate student project
  Aug 2020 – Dec 2020 | IoC Student Enterprise, University of Exeter, United Kingdom
  Students: Peranavie Thangasuthan and Benedict Rangasamy

Teaching

- **Cluster Analysis** (Unsupervised Machine Learning topics) | Invited Lecturer
  2021 | Spring term | 4 hrs | Master level | Cinvestav-IPN, Mexico
- **Fundamentals of Machine Learning (COM1011)** | Teaching Assistant
  2020 | Autumn term | 40 hrs | Bachelor level | University of Exeter, United Kingdom
- **Online Productivity Tools for Education** | Main Lecturer
  2018 | 40 hrs | Graduate level | Regional Centre for Teacher Training and Educational Research (CRETAM), Mexico
- **Digital Technologies for Education** | Main Lecturer
  2017 | 40 hrs | Graduate level | Regional Centre for Teacher Training and Educational Research (CRETAM), Mexico

Seminar and Talk Invitations

- **Aprendizaje no supervisado: fundamentos y aplicaciones**
  Foro Nacional de Tecnologías de Información y Sistemas Computacionales, *Universidad Politécnica de San Luis Potosí*. Invited by: Dr Francisco Cruz Ordaz Salazar, September 2021, San Luis Potosí, Mexico. `Online seminar`.
- **An evolutionary multi-objective approach to multiview data clustering**
  University of Exeter. Invited by: Prof Richard Everson, March 2020, Exeter, United Kingdom.
- **Multiview data clustering with application to breast lesions classification**
  Cinvestav-IPN. Invited by: Dr Miguel Morales-Sandoval, October 2019, Ciudad Victoria, Tamaulipas, Mexico.
- **An unsupervised machine learning approach for the classification of breast ultrasound image data**
  Universidad Autónoma de Tamaulipas. Invited by: Dr Ana Ríos Alvarado, October 2019, Tamaulipas, Mexico.
- **Multi-view clustering – An illustration using multiple dissimilarity measures**
  University of Manchester. Invited by: Dr Richard Allmendinger, March 2019, Manchester, United Kingdom.

Dissemination of Scientific Knowledge

- I have been strongly committed to outreach initiatives to popularise science and scientific careers to high-school students. For instance, I have given over ten dissemination talks on digital technologies, and I have co-founded the project **Mexiciencia**.
- Creation of an **interactive and dispersion map** of the COVID-19 pandemic in Mexico.
- Publication of a **general-public article**: W. Gómez-Flores and **A. José-García**. Una panorámica al agrupamiento de datos y sus aplicaciones. In *Avances en Ingeniería y Tecnologías Computacionales*, Cinvestav-IPN, Mexico, 2022.

Professional Services

Conference Program Committee Membership

- **GECCO**: The Genetic and Evolutionary Computation Conference
  Editions: Lille, France (2021) | Boston, USA (2022)
- **WCCI**: IEEE World Congress on Computational Intelligence / **CEC**: Congress on Evolutionary Computation
  Edition: Padua, Italy (2022)
- **ECML**: The European Conference on Machine Learning
  Edition: Bilbao, Spain (2021)
- **CCE**: International Conference on Electrical Engineering, Computing Science and Automatic Control)
  Editions: Mexico City, Mexico (2020) | (2021)

Reviewer of JCR Journals

- **TEVC**: IEEE Transactions on Evolutionary Computation
- **CYB**: IEEE Transactions on Cybernetics
- **CSUR**: ACM Computing Surveys
- **PR**: Pattern Recognition
- **ASOC**: Applied Soft Computing
- **SWEVO**: Swarm and Evolutionary Computation
- **COR**: Computers & Operations Research
- **HELIYON**: Heliyon
- **CAIS**: Complex & Intelligent Systems
- **COIN**: Computational Intelligence

Awards and Achievements

- **2022 – 2024** | Member of the Mexican National System of Researchers | **Level I**
- **2019 – 2021** | Member of the Mexican National System of Researchers | **Candidate Level**
- **2018 – 2019** | CONACyT Postdoctoral Fellowship
- **2013 – 2017** | CONACyT Postgraduate Fellowship
- **2010** | First Place in the Mexican National Fair of Science and Engineering 2010 | **Project**: *An adaptive social learning network with recognition of learning styles.*
- **2007** | Professional IBM Certification in *Object-Oriented Analysis and Designed* | ID: P39LAM5071
- **2007** | Sun Microsystems Certified Programmer for *Java 2 Platform* | ID: P68LAM50A5

Computer Skills

- **Programming languages**: MATLAB, C, C++, Python, Java
- **Mathematical tools**: MATLAB, R, `numpy`, `pandas`, `scikit-learn`
- **Web developer**: Markdown, HTML, CSS, PHP, Javascrip
- **Typography**: LaTeX, Markdown, LibreOffice/OpenOffice, Microsoft Office
- **Miscellaneous**: R, Git, MPI, CUDA, PThreads

Lille, France, May 9, 2022