

Jose Carlos Ortiz Bayliss, Ph.D.

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🌐 <http://jcobayliss.net>

🏢 Employment History

- 2021 –
- **Director of PhD and MSc Program in Computer Science.** Tecnologico de Monterrey, Mexico.
 - **Coordinator of the High-Specialty Certificate in Data Science.** Tecnologico de Monterrey, Mexico.
- 2016 –
- **Research Professor.** Tecnologico de Monterrey, Mexico.
- 2014 – 2016
- **Postdoctoral Researcher.** Tecnologico de Monterrey, Mexico.
- 2013 – 2014
- **Research fellow.** University of Nottingham, United Kingdom.

🎓 Education

- 2020 – 2021
- **Master in Education with major in Tutoring.** Universidad del Valle de Mexico, Mexico.
 - **Master in Special Education.** Universidad IEU, Mexico.
- 2019 – 2021
- **Master in Information Technology Administration.** Universidad Tecmilenio, Mexico.
- 2018 – 2019
- **Master in Administration of Educational Institutions.** Universidad IEU, Mexico.
 - **Master in Education with major in Innovation and Educative Technology.** Universidad del Valle de Mexico, Mexico.
- 2015 – 2019
- **Bachelor of Engineering in Project Management.** Universidad Virtual del Estado de Guanajuato, Mexico.
- 2016 – 2018
- **Master in Education with major in competency-based education.** Universidad del Valle de Mexico, Mexico.
- 2008 – 2011
- **Doctor of Philosophy in Information Technologies and Communications with major in Intelligent Systems.** Tecnologico de Monterrey, Mexico.
- 2006 – 2008
- **Master of Science with major in Intelligent Systems.** Tecnologico de Monterrey, Mexico.
- 2000 – 2006
- **Bachelor of Engineering in Computing.** Universidad Tecnologica de la Mixteca, Mexico.

📄 Publications

Journal Articles

- Cruz-Duarte, J. M., **Ortiz-Bayliss, J. C.**, Amaya, I., & Correa, R. (2021). Solving microelectronic thermal management problems using a generalized spiral optimization algorithm. *Applied Intelligence*.
🌐 <https://doi.org/https://doi.org/10.1007/s10489-020-02164-7>
- de la Rosa-Rivera, F., Nunez-Varela, J. I., **Ortiz-Bayliss, J. C.**, & Terashima-Marín, H. (2021). Algorithm selection for solving educational timetabling problems. *Expert Systems with Applications*, 174, 114694.
🌐 <https://doi.org/https://doi.org/10.1016/j.eswa.2021.114694>
- Martínez-Mascorro, G. A., Abreu-Pederzini, J. R., **Ortiz-Bayliss, J. C.**, Garcia-Collantes, A., & Terashima-Marín, H. (2021). Criminal Intention Detection at Early Stages of Shoplifting Cases by Using 3D Convolutional Neural Networks. *Computation*, 9(2). 🌐 <https://doi.org/10.3390/computation9020024>
- Olivas, F., Amaya, I., **Ortiz-Bayliss, J. C.**, Conant-Pablos, S. E., & Terashima-Marin, H. (2021). Enhancing Hyperheuristics for the Knapsack Problem through Fuzzy Logic. *Computational Intelligence and Neuroscience*, 2021, 1–17.
🌐 <https://doi.org/https://doi.org/10.1155/2021/8834324>
- Ortiz-Bayliss, J. C.**, Amaya, I., Cruz-Duarte, J. M., Gutierrez-Rodriguez, A. E., Conant-Pablos, S. E., & Terashima-Marín, H. (2021). A General Framework Based on Machine Learning for Algorithm Selection in Constraint Satisfaction Problems. *Applied Sciences*, 11(6). 🌐 <https://doi.org/10.3390/app11062749>

- Cruz-Duarte, J. M., Amaya, I., **Ortiz-Bayliss, J. C.**, Terashima-Marín, H., & Shi, Y. (2020). CUSTOMHyS: Customising Optimisation Metaheuristics via Hyper-heuristic Search. *SoftwareX*, 12, 100628.
<https://doi.org/https://doi.org/10.1016/j.softx.2020.100628>
- Cruz-Duarte, J. M., **Ortiz-Bayliss, J. C.**, Amaya, I., Shi, Y., Terashima-Marín, H., & Pillay, N. (2020). Towards a Generalised Metaheuristic Model for Continuous Optimisation Problems. *Mathematics*, 8(11).
<https://doi.org/10.3390/math8112046>
- Sánchez, M., Cruz-Duarte, J. M., **Ortiz-Bayliss, J. C.**, Ceballos, H., Terashima-Marín, H., & Amaya, I. (2020). A Systematic Review of Hyper-heuristics on Combinatorial Optimization Problems. *IEEE Access*, 1–28.
<https://doi.org/https://doi.org/10.1109/ACCESS.2020.3009318>
- Gutierrez-Rodríguez, A. E., Conant-Pablos, S. E., **Ortiz-Bayliss, J. C.**, & Terashima-Marín, H. (2019). Selecting meta-heuristics for solving vehicle routing problems with time windows via meta-learning. *Expert Systems with Applications*, 118, 470–481. <https://doi.org/https://doi.org/10.1016/j.eswa.2018.10.036>
- Plata-González, L. F., Amaya, I., **Ortiz-Bayliss, J. C.**, Conant-Pablos, S. E., Terashima-Marín, H., & Coello Coello, C. A. (2019). Evolutionary-based tailoring of synthetic instances for the Knapsack problem. *Soft Computing*, 23(23), 12711–12728. <https://doi.org/https://doi.org/10.1007/s00500-019-03822-w>
- Ortiz-Bayliss, J. C.**, Amaya, I., Conant-Pablos, S. E., & Terashima-Marín, H. (2018). Exploring the Impact of Early Decisions in Variable Ordering for Constraint Satisfaction Problems. *Computational Intelligence and Neuroscience*, 2018, 1–14. <https://doi.org/https://doi.org/10.1155/2018/6103726>
- Moreno-Scott, J., **Ortiz-Bayliss, J. C.**, Terashima-Marín, H., & Conant-Pablos, S. (2016). Experimental Matching of Instances to Heuristics for Constraint Satisfaction Problems. *Computational Intelligence and Neuroscience*, 2016.
<https://doi.org/http://dx.doi.org/10.1155/2016/7349070>
- Ortiz-Bayliss, J. C.**, Terashima-Marín, H., & Conant-Pablos, S. (2016a). Combine and conquer: an evolutionary hyper-heuristic approach for solving constraint satisfaction problems. *Artificial Intelligence Review*, 46(3), 327–349.
<https://doi.org/http://dx.doi.org/10.1007%2Fs10462-016-9466-x>
- Ortiz-Bayliss, J. C.**, Terashima-Marín, H., & Conant-Pablos, S. (2016b). A Neuro-evolutionary Hyper-heuristic Approach for Constraint Satisfaction Problems. *Cognitive Computation*, 8(3), 429–441.
<https://doi.org/http://dx.doi.org/doi:10.1007/s12559-015-9368-2>
- Ortiz-Bayliss, J. C.**, Terashima-Marín, H., & Conant-Pablos, S. E. (2013). Learning vector quantization for variable ordering in constraint satisfaction problems. *Pattern Recognition Letters*, 34(4), 423–432.
<https://doi.org/https://doi.org/10.1016/j.patrec.2012.09.009>

Additional training and courses

Diplomats

- 2019 • **Diploma in the development of teaching skills.** Universidad IEU, Mexico.
- 2017 • **Diploma ASESORE.** Tecnológico de Monterrey, Mexico.
- 2016 • **Diploma in competences for the use of mobile devices in educational environments.** Tecnológico de Monterrey, Mexico.
- 2015 • **Diploma in the development of environments for inclusive education.** Tecnológico de Monterrey, Mexico.
- **Diploma in educational evaluation.** Universidad Tecnológica de Mexico, Mexico.
- 2014 • **International diploma in Teaching competences.** Tecnológico de Monterrey, Mexico.
- **Cambridge International Diploma for Teachers and Trainers.** Cambridge International Examinations, Reino Unido.

Specializations and certifications

- 2021 • **Essential Technologies for Business.** IBM (through edX.org).
- **Data science fundamentals Specialization.** University of California, Irvine (through Coursera.org)

Additional training and courses (continued)

- **Professional Certificate in Data science.** Tecnologico de Monterrey (through edX.org)
- **Professional Certificate in Digital transformation as a business and innovation strategy.** Tecnologico de Monterrey (through edX.org)
- **Learning facilitator under model INSPIRA.** Tecnologico de Monterrey, Mexico.
- 2020 • **Basic methodology for project management.** IT Era, S. A. de C. V., Mexico.
- 2016 • **Python for everybody Specialization.** University of Michigan (through Coursera.org).
- **Executive data science Specialization.** Johns Hopkins University (through Coursera.org).
- 2015 • **Data Science Specialization.** Johns Hopkins University (through Coursera.org).

Languages

- Spanish • **Native language.**
- English • **Professional proficiency.** TOEFL ITP: 620 (2019).