

Xavier F. C. Sánchez Díaz

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Education

2021–26*	Ph.D. Artificial Intelligence, Norwegian University of Science and Technology (NO)	
2016–18	M.Sc. Intelligent Systems, Tecnológico de Monterrey	(MX)
2010–15	B.Eng. Software Engineering, Universidad Autónoma de Nuevo León	(MX)

Research Experience

2023–24	Researcher, BIAS EU Horizon Project • Advisor: Prof. Pinar Øztürk
2021–	PhD Candidate, Department of Computer Science , NTNU (NO) • Advisor: Prof. Ole J. Mengshoel
2016–17	Graduate Research Assistant, Advanced AI Group , Tecnológico de Monterrey (MX) • Advisors: Prof. Hugo Terashima-Marín & Prof. José Carlos Ortiz-Bayliss
2014–15	Undergraduate Research Assistant, FIME, UANL (MX) • Advisor: Prof. Sergio Alcaraz-Corona
2013–14	Undergraduate Research Assistant, Dept. of Maths., Tecnológico de Monterrey (MX) • Advisor: Prof. Patricia Salinas Martínez

Awards & Honors

2023	Best poster award. NorwAI Innovate 2023 (NO)
2016–17	Scholarship for graduate students. National Science and Technology Council (MX)
2015	Academic Merit medal. Universidad Autónoma de Nuevo León (MX)

*Expected.

Publications

 Google Scholar

† → Equal contribution

Journal Articles

- J1. **Sánchez-Díaz, Xavier**, Ortiz-Bayliss, J. C., Amaya, I., Cruz-Duarte, J. M., Conant-Pablos, S. E. & Terashima-Marín, H. A Feature-Independent Hyper-Heuristic Approach for Solving the Knapsack Problem. *Applied Sciences* **11**, 10209. ISSN: 2076-3417. <https://www.mdpi.com/2076-3417/11/21/10209> (2022) (21 Jan. 2021).

Peer-reviewed Conference Proceedings

- C1. **Sánchez-Díaz, Xavier F. C.**, Masson, C. & Mengshoel, O. J. *Regularized Feature Selection Landscapes: An Empirical Study of Multimodality in Parallel Problem Solving from Nature – PPSN XVIII* (eds Affenzeller, M., Winkler, S. M., Kononova, A. V., Trautmann, H., Tušar, T., Machado, P. & Bäck, T.) (Springer Nature Switzerland, Cham, Sept. 7, 2024), 409–426. ISBN: 978-3-031-70055-2.
- C2. **Sánchez-Díaz, Xavier F. C.** & Mengshoel, O. J. *Estimating the Number of Local Optima in Multimodal Pseudo-Boolean Functions: Validation via Landscapes of Triangles* in *Proceedings of the Genetic and Evolutionary Computation Conference Companion* (Association for Computing Machinery, New York, NY, USA, Aug. 1, 2024), 211–214. ISBN: 979-8-4007-0495-6. <https://dl.acm.org/doi/10.1145/3638530.3654156> (2024).
- C3. Mengshoel, O. J., Foss, F. & **Sánchez-Díaz, Xavier F. C.** *Controlling Hybrid Evolutionary Algorithms in Subset Selection for Multimodal Optimization* in *Proceedings of the Companion Conference on Genetic and Evolutionary Computation* (Association for Computing Machinery, New York, NY, USA, July 24, 2023), 507–510. ISBN: 979-8-4007-0120-7. <https://dl.acm.org/doi/10.1145/3583133.3590545> (2023).
- C4. **Sánchez-Díaz, Xavier F. C.** & Mengshoel, O. J. *EvoLP.JI: A Playground for Evolutionary Computation in Julia* in *Proceedings of the 5th Symposium of the Norwegian AI Society NAIS 2023: The 2023 Symposium of the Norwegian AI Society*. **3431** (CEUR Workshop Proceedings, Bergen, Norway, 2023). ISBN: 1613-0073. <https://ceur-ws.org/Vol-3431/paper7.pdf>.
- C5. **Sánchez-Díaz, Xavier F. C.** & Mengshoel, O. J. *Evolutionary Computation with Islands: Extending EvoLP.JI for Parallel Computing* in (Nov. 30, 2023). <https://www.ntnu.no/ojs/index.php/nikt/article/view/5667> (2023).
- C6. Schjølberg, M. E., Bekkevold, N. P., **Sánchez-Díaz, Xavier F. C.** & Mengshoel, O. J. *Comparing Metaheuristic Optimization Algorithms for Ambulance Allocation: An Experimental Simulation Study* in *Proceedings of the Genetic and Evolutionary Computation Conference* (Association for Computing Machinery, New York, NY, USA, July 12, 2023), 1454–1463. ISBN: 979-8-4007-0119-1. <https://dl.acm.org/doi/10.1145/3583131.3590345> (2023).
- C7. **Sánchez-Díaz, Xavier F. C.**, Ortiz-Bayliss, J. C., Amaya, I., Cruz-Duarte, J. M., Conant-Pablos, S. E. & Terashima-Marín, H. *A Preliminary Study on Feature-independent Hyper-heuristics for the 0/1 Knapsack Problem* in *2020 IEEE Congress on Evolutionary Computation (CEC) 2020 IEEE Congress on Evolutionary Computation (CEC)* (July 2020), 1–8. <https://ieeexplore.ieee.org/document/9185671> (2023).

- C8. **Sánchez-Díaz, Xavier**, Ayala-Bastidas, G., Fonseca-Ortiz, P. & Garrido, L. *A Knowledge-Based Methodology for Building a Conversational Chatbot as an Intelligent Tutor in Advances in Computational Intelligence* (eds Batyrshin, I., Martínez-Villaseñor, M. d. L. & Ponce Espinosa, H. E.) (Springer International Publishing, Cham, 2018), 165–175. ISBN: 978-3-030-04497-8.

Tools & Software

Norwegian Open AI Lab

[EvoLP.jl](#): A playground for evolutionary computation in Julia. Introduced at the Norwegian AI Society Symposium 2023. ([GitHub](#))

Teaching

Norwegian University of Science and Technology (NO)

2023–	Lecturer (<i>faglærer</i>), Introduction to Artificial Intelligence (TDT4136)
2023–	Lecturer, Bio-Inspired Artificial Intelligence (IT3708)
2022	Teaching Fellow (<i>VitAss</i>), Introduction to Artificial Intelligence (TDT4136)
2022	Teaching Fellow, Bio-inspired Artificial Intelligence (IT3708)

Tecnológico de Monterrey (MX)

2021	Course Coordinator (<i>emneansvarlig</i>), Knowledge-based Systems (TC2033)
2021	Course Coordinator, Computing Fundamentals and Paradigms (TC2037)
2020–21	Course Coordinator, Discrete Mathematics and Linear Algebra (TC1003/B)
2020	Course Coordinator, Numerical Methods for Civil Engineering (CV1012)
2020	Course Coordinator, Data Structures and Fundamental Algorithms (TC1031)
2019	Course Coordinator, Problem Solving with Programming (TC1017)
2018–19	Course Coordinator, Programming Languages (TC2006)
2018–20	Course Coordinator, Mathematical Foundations of Computing (TC2020)

Academic Advising

Graduate

Norwegian University of Science and Technology

† → with Prof. Pauline C. Haddow as main supervisor
‡ → with Prof. Ole Jakob Mengshoel as main supervisor

2024–	Martin Skatvedt, Co-supervisor [†]
2024–	Storm Jan Anton Visser, Co-supervisor [†]
2024–	Yousif Almallah, Co-supervisor [†]
2024	Corentin Masson, Co-supervisor [‡]

Tecnológico de Monterrey

* → with Prof. José Carlos Ortiz Bayliss as main supervisor

2019–20 Erick Lara Cárdenas, Co-supervisor*

Undergraduate

Tecnológico de Monterrey

2022–23 Karla Cáceres Alvarado, ICT Project in Intelligent Systems I & II
2022 Alejandro Cedillo Gámez, ICT Project in Intelligent Systems I
2021 Felipe de Jesús Villaseñor Cavazos, ICT Project in Intelligent Systems I

Academic Service

Reviewing

2022 Springer: Computational Management Science

Other Service and Volunteering

2025 Local chair, IEEE Symposium Series on Computational Intelligence 2025
2023– Board member, Norwegian AI Society

Other Experience

2022–24 Strategic Planning Committee Technical Support, [IEEE CIS](#)
2018–20 Data scientist, [Advanced AI Group](#), Tecnológico de Monterrey (MX)
2017 Knowledge Engineer, Center for Intelligent Systems, [Tecnológico de Monterrey](#) (MX)
2013–15 Lead developer, Department of Mathematics, [Tecnológico de Monterrey](#) (MX)

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