Joaquín Delgado Fernández
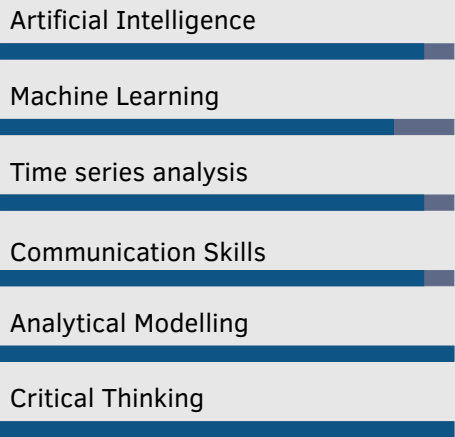
Ph.D. Computer Science

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Skills

Artificial Intelligence

Machine Learning

Time series analysis

Communication Skills

Analytical Modelling

Critical Thinking

Languages

Spanish

English

French

About me

As a Ph.D. in Computer Science and accomplished Software Engineer, I've had the privilege of serving as a Researcher at the Interdisciplinary Center for Security, Reliability, and Trust (SnT), University of Luxembourg. My specialization lies in distributed computing, with a strong emphasis on advanced machine learning applications for energy systems.

Throughout my academic and professional journey, I've gained extensive experience in machine learning applications, with a primary focus on enhancing distributed machine learning technologies.

My research has made a significant impact in the energy sector, where I work diligently to improve load forecasting, as well as in the financial sector, where I've led innovations in credit risk assessment.

Experience

2023 — Postdoctoral Researcher — SnT - University of Luxembourg - Luxembourg

- Forefront of the energy revolution through advanced AI techniques.
- Collaborating closely between the SnT and Lead Energy supplier in Luxembourg.
- Use of AI and machine learning to reduce forecasting errors and enhance energy supply and demand dynamics.
- Write and evaluate national (FR, LUX) and international (EU) research proposals.

2020 - 2023 — Doctoral Researcher — SnT - University of Luxembourg - Luxembourg

- Close collaboration with energy and financial experts from both industry and academia.
- Development of time-series models in the University of Luxembourg's High Performance Computer (HPC).
- Project management duties of a large European consortium.
- Write national and international (EU) research proposals.

2019 - 2020 — Data Scientist — Shift Technology - Paris, France

- Representing the Shift product from a technical point of view to customers, including demonstrations, conducting proof-of-concept trials, helping clients evaluate success criteria, and training users.
- Presentation of results to steering committees and performance reviews.
- Participation in workshops with clients to collect feedback and integrate it into models.
- Pre-sales of products to new potential clients all over the world.

2018 - 2019 — International Graduate Consultant — The AKKAdemy - Geneva/Lyon

- Development of a Collision Avoidance and Emergency Break Algorithm for Autonomous Vehicles on behalf of Akka Research
- Full-time applied training on: Agile methods, stakeholder management, innovation strategy, risk management, customer analysis

2017 - 2018 — Artificial Intelligence Intern — BISITE Research Group - Salamanca, Spain
Machine Learning techniques and data analysis for Business Intelligence

Education

2023	**PhD. Computer Science** University of Luxembourg **Thesis title: Breaking data silos with Federated Learning -** Nominated for the Best thesis award
2019	**M.Sc. Artificial Intelligence** International University of La Rioja
2018	**B.Eng. Computer Science engineering** University of Salamanca
2016	**Computer Science engineering** University of Wolverhampton **Erasmus Exchange Programme (Full Year)**

Published articles

Fernández, J. D., Menci, S. P., Lee, C. M., Rieger, A., & Fridgen, G. (2022). Privacy-preserving federated learning for residential short-term load forecasting.
Applied Energy - Top 1 % Journal

Fernández, J. D., Menci, S. P., Lee, C. M., Rieger, A., & Fridgen, G. (2022). Federated Learning for Credit Risk Assessment.
HICSS - A1 Conference

Sprenkamp, K., Fernández, J. D., Eckhardt, S., & Zavolokina, L. (2023, January). Federated Learning as a Solution for Problems Related to Intergovernmental Data Sharing.
HICSS - A1 Conference

Fernández, J. D., Menci, S. P., Pavic, I. (2022). Towards a peer-to-peer residential short-term load forecasting with federated learning.
Forthcoming - PowerTech

Under review Publications

Fernández, J. D., Willburger, L., Wiethe, C., Wenninger, S., & Fridgen, G. (2022). Scaling smart cities with federated learning – balancing accuracy and privacy for building energy performance prediction.
Under review - Top 1 % journal

Lee, C. M., Fernández, J. D., Barbereau, T., & Fridgen, G. (2022). Federated Learning.
Under review - 88 % journal

Fernández, J. D., Barbereau, T., & Papageorgiou, O. (2022). Agent-based Model of Initial Token Allocations: Evaluating Wealth Concentration in Fair Launches.
Under review - 88 % journal

Presentations and other activities

2023	Revision of research proposals for the Agence nationale de la recherche (ANR) **SnT University of Luxembourg**
2023	Federated Learning in the new banking sector **Stuttgart Stock Exchange**
2022	Federated Learning for Problems Related to Intergovernmental Data Sharing **ESCAP United Nations**
2022	Federated Learning for Credit Risk Assessment **Financial Innovation Hub - SnT University of Luxembourg**