Daniela F. MILÓN-FLORES
Data Scientist | Machine Learning & Knowledge Graphs
Designing AI Systems for Complex Data Analysis

My Contact

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- 🌐 Homepage

Technical Skills

Machine Learning
Neural Networks, Large Language Models, Natural Language Processing, Time Series Modeling

Semantic Web Technologies
Ontologies, Knowledge Graphs, RDF, OWL, SPARQL

Programming
Python, R, C++

Frameworks & Tools
TensorFlow, Keras, Scikit-learn, GraphDB, Protégé

Research Interests

- Hybrid Machine Learning & Knowledge Graph Systems
- Risk Detection in Complex & Behavioral Data
- Temporal & Pattern-Based Data Modeling
- Natural Language Processing Techniques

Academic Service

Teaching

Research Profile

Data scientist specializing in machine learning and knowledge graph technologies. Experienced in developing data-driven systems for risk detection and long-term pattern analysis from conversational text and large-scale temporal data. Skilled in designing structured pipelines from data preprocessing to model evaluation and semantic enrichment.

Research Experience

Doctoral Researcher — Université Grenoble Alpes   *2022–2025*

Developed an integrated machine learning and knowledge-based framework for the analysis of spatio-temporal data

- Applied machine learning techniques for long-term time series modeling, including change-point detection analysis on large-scale environmental datasets.
- Designed and formalized a domain-specific ontology to structure heterogeneous datasets, enabling semantic enrichment, interoperability, and structured knowledge representation.
- Developed an operational framework combining machine learning methods with Semantic Web technologies (RDF, OWL, SPARQL) to transform analytical outputs into structured knowledge graphs.
- Engineered and populated a knowledge graph to support the interpretation, integration, and reuse of model results, validated through a real-world implementation within the Franco-Swiss TRACES project.
- Integrated heterogeneous environmental and demographic data into unified analytical workflows using interoperable data models and standardized vocabularies.
- Disseminated results through international conferences and peer-reviewed publications.

M.Sc. Researcher — University of São Paulo   *2020–2022*

Developed a machine learning framework for the early detection of online grooming in conversational data

- Identified and modeled behavioral risk patterns in online interactions through feature engineering.
- Applied natural language processing techniques to extract linguistic, emotional, and interaction-based signals from conversational text.

- Teaching Assistant (PAE), University of São Paulo (2021–2022)

Supervision

- Supervised Master's and internship students, Université Grenoble Alpes (2023–2025)

Peer Review

- Reviewer for international conferences and workshops (2021–2022)

Education

- **PhD in Computer Science** Université Grenoble Alpes, France (2022–2025)
- **MSc in Computer Science** University of São Paulo (USP), Brazil (2020–2022)
- **BSc in Computer Science** Universidad Católica San Pablo, Peru (2014–2019)

Languages

- Spanish — Native
- Portuguese — Fluent
- English — Fluent
- French — Intermediate

References

- **Prof. Jérôme Gensel** Université Grenoble Alpes `jerome.gensel@univ-grenoble-alpes.fr`
- **Dr. Camille Bernard** Université Grenoble Alpes `camille.bernard@univ-grenoble-alpes.fr`
- **Prof. Robson Ferreira Cordeiro** University of São Paulo `rlfcordeiro@gmail.com`

- Implemented and evaluated machine learning classifiers for early-stage detection under limited contextual information.
- Designed an end-to-end detection pipeline from feature extraction to model evaluation and alert triggering.
- Assessed performance using precision, recall, and F1-score to measure early detection capability.
- Published findings in the peer-reviewed journal *Knowledge-Based Systems*.
- Contributed to public dissemination of research results through Brazilian media coverage.

Selected Publications

- **Milon-Flores, D. F.**, Bernard, C., Gensel, J., Giuliani, G. (2025). *Semantic Description of Satellite Earth Observation Time Series*. SAGEO Conference.
- **Milon-Flores, D. F.**, Bernard, C., Gensel, J., Giuliani, G., Chatenoux, B., Dao, H. (2024). *Towards Semantic Enrichment of Earth Observation Data: The LEODS Framework*. AGILE Conference on Geographic Information Science.
- **Milon-Flores, D. F.**, Bernard, C., Gensel, J., Giuliani, G., Chatenoux, B., Dao, H. (2024). *Publication of Satellite Earth Observations in the Linked Open Data Cloud: Experiment Through the TRACES Project*. W2GIS, Springer, pp. 67–85.
- **Milon-Flores, D. F.**, Bernard, C., Gensel, J., Giuliani, G. (2024). *LEODS: Un Framework pour la Publication d'Observations Satellitaires dans le Web des Données*. GAST Conference.
- Lippolis, A. S., Klironomos, A., **Milon-Flores, D. F.**, et al. (2023). *Enhancing Entity Alignment Between Wikidata and ArtGraph Using LLMs*. SWODCH 2023, CEUR-WS.
- **Milon-Flores, D. F.** (2022). *Semantic Environmental Trajectories of Territorial Units*. ISWC Doctoral Consortium, CEUR-WS.
- **Milon-Flores, D. F.**, Cordeiro, R. L. F., et al. (2022). *How to take advantage of behavioral features for the early detection of grooming in online conversations*. Knowledge-Based Systems, 240, 108017.
- **Milon-Flores, D. F.**, et al. (2019). *Generating audiovisual summaries from literary works using emotion analysis*. 32nd SIBGRAPI Conference on Graphics, Patterns and Images (IEEE).

Awards & Academic Recognition

- **Best Paper Presentation Award**, W2GIS Conference (2024) Awarded for best presentation at the Web and Wireless Geographical Information Systems (W2GIS) Conference.
- **Best Poster Presentation Award**, International Semantic Web Summer School (2023)
- **Research Dissemination in National Media**, Brazil (2022) Algorithm for monitoring online sexual harassment of children featured in:
  - University of São Paulo Newsletter
  - Jornal da Gazeta (online interview)
  - Globo Newsletter
- **Best BSc Thesis Award in Computer Science**, Universidad Católica San Pablo (2019)