Flavio Giobergia

Assistant Professor @ Politecnico di Torino

Work experience

- Assistant Professor Politecnico di Torino
 - Turin, Italy
 - May 2024 Present
- Postdoctoral Researcher Politecnico di Torino
 - Turin, Italy
 - January 2023 April 2023
- PhD Student Politecnico di Torino
 - Turin, Italy
 - November 2019 December 2022
- Associate IT Architect IBM
 - Milan, Italy
 - November 2017 March 2019
- Cloud computing intern Fermi National Accelerator Laboratory (Fermilab)
 - Batavia, Illinois, USA
 - July 2016 September 2016
- Web developer intern Berkman Klein Center for Internet & Society, Harvard University
 - Cambridge, Massachusetts, USA
 - June 2014 August 2014

Education

- PhD in Computer and Control Engineering (2019 2023)
 - Politecnico di Torino
 - Thesis title: "Machine Learning with Limited Label Availability: Algorithms and Applications"
- MSc in Computer Engineering (2015 2017)
 - Politecnico di Torino
 - Grade: 110/110
 - Thesis title: "Data mining in the automotive industry for predictive maintenance"
- Alta Scuola Politecnica (ASP) Program (2015 2017)
 - Politecnico di Torino and Politecnico di Milano
 - Participant to the ASP interdisciplinary honors program for selected students
- MSc in Computer Engineering (2015 2017)
 - Politecnico di Milano
 - Complementary degree awarded through Alta Scuola Politecnica's dual degree program, upon successful achievement of the goals set by ASP
- BSc in Computer Engineering (2012 2015)
 - Politecnico di Torino
 - Grade: 110/110

Invited Talks

- Urban Promo Convegno Scientifico Società Italiana di Estimo e Valutazione. Event: INTELLIGENZA ARTIFICIALE: IMPATTI POTENZIALI E NUOVE PROSPETTIVE NEL CAMPO DELL'ESTIMO E DELLA VALUTAZIONE (PRIMA PARTE). Title: A primer in Machine Learning and Generative AI. Florence, Italy, 08/11/2024
- Banca d'Italia. Event: Workshop su AI e il contrasto alla criminalità finanziaria. Title: *Il monitoraggio delle transazioni: sfide operative e risposte dell'AI*. Rome, Italy, 29/05/2025

- ITADATA 4th Italian Conference on Big Data and Data Science. Event: Anti-Financial Crime Digital Hub tutorial. Title: Anomaly Detection of Suspicious Financial Accounts. Turin, Italy, 11/09/2025
- . Event: Seminario Anti-Financial Crime Digital Hub. Title: Apprendere dai dati sequenziali: tecniche e applicazioni. online, 05/04/2024
- tuttosoldi Festa dell'Educazione Finanziaria. Event: . Title: Pagamenti Digitali, Truffe e Fuffaguru. Turin, Italy, 24/10/2025

Activities

- Program Committee, IEEE ICDM (International Conference on Data Mining) (2025)
- Program Committee, ECML PKDD 2025 European Conference on Machine Learning and Principles and Practice of Knowledge Discovery in Databases (2025)
- Program Committee ("Commendable reviewer"), KDD 2025 Datasets and Benchmarks Track 31st SIGKDD Conference on Knowledge Discovery and Data Mining (2025)
- Web chair, MUM 2025 24th International Conference on Mobile and Ubiquitous Multimedia (2025)
- Program Committee, The Workshop on AI in Big Data Analytic for Healthcare @ IEEE BigData 2025 2025 IEEE International Conference on Big Data (2025)
- Workshop Chair, AI4FCF 2025 2nd Workshop on AI for Financial Crime Fight @ IEEE ICDM 2025 International Conference on Data Mining (2025)
- Workshop Chair, WIPE-OUT 2025 Workshop on Innovations, Privacy-preservation, and Evaluations
 Of machine Unlearning Techniques @ ECML PKDD 2025 European Conference on Machine Learning
 and Principles and Practice of Knowledge Discovery in Databases (2025)
- Program Committee, IEEE ICDM (International Conference on Data Mining) (2024)
- Program Committee, 8th International workshop on Data Analytics solutions for Real-LIfe APplications
 EDBT ICDT 2024 (2024)
- Program Committee, PAKDD 2024 The 28th Pacific-Asia Conference on Knowledge Discovery and Data Mining (2024)
- Program Committee, MCMI Workshop on Multi- and Cross-Modal Information for Enhanced Pattern Recognition @ ICPR 2024 International Conference on Pattern Recognition (2024)
- Program Committee, KDD 2024 Research Track 30th SIGKDD Conference on Knowledge Discovery and Data Mining (2024)
- Program Committee, The Workshop on AI in Big Data Analytic for Healthcare @ IEEE BigData 2024 2024 IEEE International Conference on Big Data (2024)
- Workshop Chair, AI4FCF 2024 1st Workshop on AI for Financial Crime Fight @ IEEE ICDM 2024 International Conference on Data Mining (2024)
- Web and Publicity Chair, First Special Day on Artificial Intelligence for Financial Crime Fight @ ECML PKDD 2023 (2023)
- Social Media and Publicity Chair, ECML PKDD 2023 (2023)
- Program Committee, IEEE ICDM (International Conference on Data Mining) (2023)
- Program Committee, 7th International workshop on Data Analytics solutions for Real-LIfe APplications
 EDBT ICDT 2023 (2023)
- Program Committee, ECML PKDD 2023 European Conference on Machine Learning and Principles and Practice of Knowledge Discovery in Databases (2023)

- Program Committee, The Workshop on AI in Big Data Analytic for Healthcare @ IEEE BigData 2023 2023 IEEE International Conference on Big Data (2023)
- Program Committee, IEEE ICDM (International Conference on Data Mining) (2022)

Patents

• Method and system for predicting system status. Applicant: GM Global Technology Operations LLC. Inventors: Alessandra Neri, Maria Camuglia, Alessia Tuninetti, Elena Baralis, Flavio Giobergia, Davide Tricarico. Status: Granted (Patent Number: US11423321B2)

Projects

- Principal Investigator. Project: "MAD Standard Banking", partner: Anti Financial Crime Digital Hub (2025)
- Collaborator. Project: "MAD Digital Banking", partner: Anti Financial Crime Digital Hub (2025)
- Collaborator. Project: "MAD Multicriteria Anomaly Detection", partner: Anti Financial Crime Digital Hub (2024)
- Principal Investigator. Project: "Survey, AI for Anti Financial Crime", partner: Anti Financial Crime Digital Hub (2024)
- Principal Investigator. Project: "ImEDA Improving Efficiency in Detection Analysis", partner: Anti Financial Crime Digital Hub (2023/24)
- Collaborator. Project: "Hidden Risk", partner: Intesa Sanpaolo, Intesa Sanpaolo Innovation Center (2022/23)
- Collaborator. Project: "Subsystem selection and preliminary data and Preventive diagnostic models", partner: General Motors (2016/17)

Teaching activities

- Main lecturer. Information Tools and Skills for Business (Pre-master year, Master in Management, ESCP Business School). 24 hours (A.Y. 2025/26)
- Main lecturer. Data Science and Machine Learning Lab (MSc, Data Science and Engineering, Politecnico di Torino). 54.0 hours (A.Y. 2025/26)
- Main lecturer. Data mining concepts and algorithms (PhD course, Politecnico di Torino). 14 hours (A.Y. 2025/26)
- Teaching assistant. Large Language Models for Software Engineering (MSc, Computer Engineering, Politecnico di Torino). 21 hours (A.Y. 2024/25)
- Main lecturer. Information Tools and Skills for Business (Pre-master year, Master in Management, ESCP Business School). 24 hours (A.Y. 2024/25)
- Main lecturer. Data mining concepts and algorithms (PhD course, Politecnico di Torino). 14 hours (A.Y. 2024/25)
- Main lecturer. Data Science Lab: process and methods (MSc, Data Science and Engineering, Politecnico di Torino). 54.0 hours (A.Y. 2024/25)
- Main lecturer. Large Language Models (MSc, Computer Engineering, Politecnico di Torino). 31.5 hours (A.Y. 2024/25)
- Co-lecturer. Data Mining per Dati Sperimentali (MSc, Intelligenza Artificiale e Innovazione Digitale, Universita' del Piemonte Orientale). 48 hours (A.Y. 2023/24)

- Teaching assistant. Business intelligence per big data (MSc, Engineering Management, Politecnico di Torino). 15 hours (A.Y. 2023/24)
- Teaching assistant. Data Science Lab: process and methods (MSc, Data Science and Engineering, Politecnico di Torino). 27.0 hours (A.Y. 2023/24)
- Teaching assistant. Transport systems and data analytics (MSc, Civil Engineering, Politecnico di Torino). 21.0 hours (A.Y. 2023/24)
- Co-lecturer. Data Mining per Dati Sperimentali (MSc, Intelligenza Artificiale e Innovazione Digitale, Universita' del Piemonte Orientale). 48 hours (A.Y. 2022/23)
- Teaching assistant. Data Science Lab: process and methods (MSc, Data Science and Engineering, Politecnico di Torino). 42.0 hours (A.Y. 2022/23)
- Teaching assistant. Data Science e Tecnologie per le Basi di Dati (MSc, Computer Engineering, Politecnico di Torino). 18 hours (A.Y. 2022/23)
- Teaching assistant. Data Science Lab: process and methods (MSc, Data Science and Engineering, Politecnico di Torino). 34.5 hours (A.Y. 2021/22)
- Teaching assistant. Data Science e Tecnologie per le Basi di Dati (MSc, Computer Engineering, Politecnico di Torino). 21 hours (A.Y. 2021/22)
- Teaching assistant. Data Science Lab: process and methods (MSc, Data Science and Engineering, Politecnico di Torino). 32 hours (A.Y. 2020/21)
- Teaching assistant. Data Science e Tecnologie per le Basi di Dati (MSc, Computer Engineering, Politecnico di Torino). 28 hours (A.Y. 2020/21)
- Teaching assistant. Data Science Lab: process and methods (MSc, Data Science and Engineering, Politecnico di Torino). 30 hours (A.Y. 2019/20)
- Teaching assistant. Data Science e Tecnologie per le Basi di Dati (MSc, Computer Engineering, Politecnico di Torino). 28 hours (A.Y. 2019/20)

Other teaching-related activities

- Lecturer. Samsung Innovation Campus (Camplus College Fondazione C.E.U.R., Samsung). 8 hours, in 2023
- Tutor. Informatica (Camplus College Fondazione C.E.U.R.). 13.75 hours, in 2022/23
- Tutor. Algoritmi e strutture dati (Camplus College Fondazione C.E.U.R.). 2.75 hours, in 2022/23
- Lecturer. Samsung Innovation Campus (Camplus College Fondazione C.E.U.R., Samsung). 16 hours, in 2022
- Tutor. Informatica (Camplus College Fondazione C.E.U.R.). 12.5 hours, in 2021/22
- Lecturer. Architetture di gestione dati e strutture Data Base per applicazione a Use Case specifici per AMET (Skillab). 8 hours, in 2019
- (Student) teaching assistant. Databases, Computer Networks, Computer science (BSc, Computer Engineering) (Politecnico di Torino). 80 hours, in 2015/16

Publications

• Giobergia, Flavio and Pastor, Eliana and de Alfaro, Luca and Baralis, Elena. *Detecting interpretable subgroup drifts* (2025). Proceedings of the 31st ACM SIGKDD Conference on Knowledge Discovery and Data Mining V. 1

- Koudounas, Alkis and Savelli, Claudio and Giobergia, Flavio and Baralis, Elena. "Alexa, can you forget me?" Machine Unlearning Benchmark in Spoken Language Understanding (2025).
- Paoletti, Giordano and Giobergia, Flavio and Giordano, Danilo and Cagliero, Luca and Ronchiadin, Silvia and Moncalvo, Dario and Mellia, Marco and Baralis, Elena. MAD: Multicriteria Anomaly Detection of Suspicious Financial Accounts from Billions of Cash Transactions (2025). Proceedings of the 31st ACM SIGKDD Conference on Knowledge Discovery and Data Mining V. 2
- Giobergia, Flavio. MINDS at SemEval-2025 Task 8: Question Answering Over Tabular Data via Large Language Model-generated SQL Queries (2025). Proceedings of the 19th International Workshop on Semantic Evaluation (SemEval-2025)
- Savelli, Claudio and Koudounas, Alkis and Giobergia, Flavio. MALTO at SemEval-2025 task 3: Detecting hallucinations in LLMs via uncertainty quantification and larger model validation (2025). Proceedings of the 19th International Workshop on Semantic Evaluation (SemEval-2025)
- Giobergia, Flavio and Savelli, Claudio and Koudounas, Alkis and Baralis, Elena and others. *Quantum feature selection from interpretable models using QUBO formulation* (2025).
- Fulcini, Tommaso and Coppola, Riccardo and Giobergia, Flavio and Changizi, Amirali and Dashti, Meelad and Dorrani, Kimia and Amalfitano, Domenico and Distante, Damiano and Ricca, Filippo and others. Enhancing Software Maintainability through LLM-Assisted Code Refactoring (2025). 26th International Conference on Product-Focused Software Process Improvement (Profes)
- Monaco, Simone and Bussola, Nicole and Butt{'o}, Sara and Sona, Diego and Giobergia, Flavio and Jurman, Giuseppe and Xinaris, Christodoulos and Apiletti, Daniele. AI models for automated segmentation of engineered polycystic kidney tubules (2024).
- Borra, Federico and Savelli, Claudio and Rosso, Giacomo and Koudounas, Alkis and Giobergia, Flavio. *Malto at semeval-2024 task 6: Leveraging synthetic data for llm hallucination detection* (2024). Proceedings of the 18th International Workshop on Semantic Evaluation (SemEval-2024)
- Cancedda, Christian and Cappellato, Alessio and Maninchedda, Luigi and Meacci, Leonardo and Peracchi, Sofia and Salerni, Claudia and Baralis, Elena and Giobergia, Flavio and Ceri, Stefano. Social and economic variables explain COVID-19 diffusion in European regions (2024).
- Koudounas, Alkis and Giobergia, Flavio. Houston we have a divergence: A subgroup performance analysis of asr models (2024). 2024 IEEE International Conference on Acoustics, Speech, and Signal Processing Workshops (ICASSPW)
- Poeta, Eleonora and Giobergia, Flavio and Pastor, Eliana and Cerquitelli, Tania and Baralis, Elena. A benchmarking study of kolmogorov-arnold networks on tabular data (2024). 2024 IEEE 18th International Conference on Application of Information and Communication Technologies (AICT)
- Giobergia, Flavio and Pastor, Eliana and de Alfaro, Luca and Baralis, Elena. A Synthetic Benchmark to Explore Limitations of Localized Drift Detections (2024). International Workshop on Discovering Drift Phenomena in Evolving Landscapes
- Koudounas, Alkis and Giobergia, Flavio and Baralis, Elena. Ex (o) plain: Subgroup-level analysis of exoplanet atmospheric parameters (2024).
- Koudounas, Alkis and Giobergia, Flavio and Pastor, Eliana and Baralis, Elena. A Contrastive Learning Approach to Mitigate Bias in Speech Models (2024). Proc. Interspeech 2024
- Savelli, Claudio and Giobergia, Flavio. Enhancing Cross-Lingual Word Embeddings: Aligned Subword Vectors for Out-of-Vocabulary Terms in fastText (2024). 2024 IEEE 18th International Conference on Application of Information and Communication Technologies (AICT)
- Giobergia, Flavio and Koudounas, Alkis and Baralis, Elena. Large Language Models-aided Literature Reviews: A Study on Few-Shot Relevance Classification (2024). 2024 IEEE 18th International Conference on Application of Information and Communication Technologies (AICT)

- Tornago, M and Giobergia, F and Menzio, L and Siviero, F and Arcidiacono, R and Cartiglia, N and Costa, M and Ferrero, M and Gioachin, G and Mandurrino, M and others. Silicon sensors with resistive read-out: Machine Learning techniques for ultimate spatial resolution (2023).
- Koudounas, Alkis and Giobergia, Flavio and Benedetto, Irene and Monaco, Simone and Cagliero, Luca and Apiletti, Daniele and Baralis, Elena and others. baρtti at geolingit: Beyond boundaries, enhancing geolocation prediction and dialect classification on social media in italy (2023). CEUR workshop proceedings
- Giobergia, Flavio. Giobergia at Multi-Task Transformer Tuning for Joint Conspiracy Theory Detection and Classification. (2023). EVALITA
- Giobergia, Flavio and Koudounas, Alkis and Baralis, Elena. Reconstructing atmospheric parameters of exoplanets using deep learning (2023). 2023 IEEE 17th International Conference on Application of Information and Communication Technologies (AICT)
- Koudounas, Alkis and Giobergia, Flavio and Baralis, Elena. Bad exoplanet! explaining degraded performance when reconstructing exoplanets atmospheric parameters (2023). NeurIPS 2023 AI for Science Workshop
- Giobergia, Flavio and Baralis, Elena. Late Fusion-based Distributed Multimodal Learning (2023). 2023 IEEE International Conference on Big Data (BigData)
- Neri, Alessandra and Camuglia, Maria and TUNINETTI, Alessia and Baralis, Elena and Giobergia, Flavio and Tricarico, Davide. *Method and system for predicting system status* (2022).
- Giordano, Danilo and Giobergia, Flavio and Pastor, Eliana and La Macchia, Antonio and Cerquitelli, Tania and Baralis, Elena and Mellia, Marco and Tricarico, Davide. Data-driven strategies for predictive maintenance: Lesson learned from an automotive use case (2022).
- Siviero, Federico and Giobergia, Flavio and Menzio, Luca and Miserocchi, Filippo and Tornago, Marta and Arcidiacono, Roberta and Cartiglia, Nicolo' and Costa, Marco and Ferrero, Marco and Gioachin, G and others. First experimental results of the spatial resolution of RSD pad arrays read out with a 16-ch board (2022).
- Giobergia, Flavio and Baralis, Elena. Reclaim: Reverse engineering classification metrics (2022). 2022 IEEE Fifth International Conference on Artificial Intelligence and Knowledge Engineering (AIKE)
- Pasini, Andrea and Giobergia, Flavio and Pastor, Eliana and Baralis, Elena. Semantic image collection summarization with frequent subgraph mining (2022).
- Koudounas, Alkis and Giobergia, Flavio and Baralis, Elena. *Time-of-flight cameras in space: Pose estimation with deep learning methodologies* (2022). 2022 IEEE 16th International Conference on Application of Information and Communication Technologies (AICT)
- Giobergia, Flavio. Triplet Losses-based Matrix Factorization for Robust Recommendations (2022). Proceedings of the CIKM 2022 Workshops
- Giordano, Danilo and Pastor, Eliana and Giobergia, Flavio and Cerquitelli, Tania and Baralis, Elena and Mellia, Marco and Neri, Alessandra and Tricarico, Davide. *Dissecting a data-driven prognostic pipeline: A powertrain use case* (2021).
- Giobergia, Flavio and Cagliero, Luca and Garza, Paolo and Baralis, Elena. Cross-Lingual Propagation of Sentiment Information Based on Bilingual Vector Space Alignment. (2020). EDBT/ICDT Workshops
- Attanasio, Giuseppe and Giobergia, Flavio and Pasini, Andrea and Ventura, Francesco and Baralis, Elena and Cagliero, Luca and Garza, Paolo and Apiletti, Daniele and Cerquitelli, Tania and Chiusano, Silvia. DSLE: a smart platform for designing data science competitions (2020). 2020 IEEE 44th Annual Computers, Software, and Applications Conference (COMPSAC)
- Montoro, Lorenzo. Cross-Lingual Sentiment Analysis (2020).

- Giobergia, Flavio and Baralis, Elena. Fast self-organizing maps training (2019). 2019 IEEE International Conference on Big Data (Big Data)
- La Macchia, Antonio. Data Analysis for Predictive Maintenance in the Automotive Industry (2019).
- Giobergia, Flavio and Baralis, Elena and Camuglia, Maria and Cerquitelli, Tania and Mellia, Marco and Neri, Alessandra and Tricarico, Davide and Tuninetti, Alessia. *Mining sensor data for predictive maintenance in the automotive industry* (2018). 2018 IEEE 5th International Conference on Data Science and Advanced Analytics (DSAA)
- Giobergia, Flavio and Baralis, Elena and Camuglia, Maria and Neri, Alessandra and Tricarico, Davide and Tuninetti, Alessia and others. *Method and System for Predicting System Status* (2018).
- Giobergia, Flavio. Data mining in the automotive industry for predictive maintenance (2017).

MSc students supervised

2025

- TORTONE ALESSIA 14/03/2025 (Inferenza bayesiana per l'inverse modeling dello spettro atmosferico di esopianeti)
- LONGO MARIA ANTONIETTA 14/03/2025 (A Synthetic Data Generation Approach for Subgroup-Based Bias Mitigation in Structured Data)
- GIANUSSO FABIO 18/07/2025 (Generation of Synthetic Tabular Data for Controlled Machine Unlearning)
- BUGNI DUCH SIMONE 25/07/2025 (Application of Large Language Models in Software Testing: An Analysis of Method-Level Bug Detection)
- LA CIURA ALESSANDRO 21/10/2025 (Unsupervised Learning Models for Anomaly Detection in Digital Banking Accounts)
- ROMEO ALESSANDRO 21/10/2025 (Rilevamento e Mitigazione di Allucinazioni in Large Language Models)
- SGROI LEONARDO 21/10/2025 (Integrating Multi-Modal Reasoning and Explainable AI for Dermatological Image Analysis via LLM-Orchestrated Toolchains)

2024

- SAVELLI CLAUDIO 26/07/2024 (Bad Teaching in Machine Unlearning with Similarity-based Sampling)
- \bullet MARIGIOLI FRANCESCO 26/07/2024 (Real-Time Human Detection in World Rally Championship for danger recognition system)
- CHIARTANO STEFANO 31/10/2024 (Word Embedding applications for Anomaly Detection in financial data)
- BRACCI JACOPO 31/10/2024 (Language and Vision models for PET Assisted Reporting)

2023

- PALMERI MARIO GABRIELE 15/12/2023 (Anomaly Detection for Anti-Financial Crime)
- DE GIROLAMO PATRIZIO 27/10/2023 (Unsupervised Outlier Detection from Financial Transaction Data)
- DE CRISTOFARO JACOPO 27/10/2023 (Cluster Analysis of Financial Transaction Data)

2019

 LA MACCHIA ANTONIO 18/12/2019 (Data Analysis for Predictive Maintenance in the Automotive Industry)

Attended conferences

- 31st ACM SIGKDD Conference on Knowledge Discovery and Data Mining (KDD 2025) (2025) @ Toronto, Canada
- IJCAI 2025 35th International Joint Conference on Artificial Intelligence (2025) @ Montreal, Canada
- Conference and Labs of the Evaluation Forum (2025) @ Madrid, Spain (online)
- 2024 IEEE 18th International Conference on Application of Information and Communication Technologies (AICT) (2024) @ Turin, Italy
- 30th ACM SIGKDD Conference on Knowledge Discovery and Data Mining (KDD 2024) (2024) @ Barcelona, Spain
- IEEE International Conference on Data Mining (ICDM 2024) (2024) @ Abu Dhabi, UAE
- ECML PKDD 2023 European Conference on Machine Learning and Principles and Practice of Knowledge Discovery in Databases (2023) @ Turin, Italy
- EVALITA 2023 8th Evaluation of NLP and Speech Tools for Italian (2023) @ Parma, Italy
- 2023 IEEE International Conference on Big Data (BigData) (2023) @ Sorrento, Italy
- 2022 IEEE Fifth International Conference on Artificial Intelligence and Knowledge Engineering (AIKE) (2022) @ Laguna Hills, CA, USA (online)
- CIKM 2022 The 31st ACM International Conference on Information and Knowledge Management (2022) @ Atlanta, Georgia, USA (online)
- EDBT/ICDT 2020 Joint Conference (2020) @ Copenhagen, Denmark (online)
- 2019 IEEE International Conference on Big Data (Big Data) (2019) @ Los Angeles, CA, USA
- 2018 IEEE 5th International Conference on Data Science and Advanced Analytics (DSAA) (2018) @ Turin, Italy