

Amirhossein Bagheri

Contact: amirhossein.bagheri.001@gmail.com

Links: Website

GitHub

Google Scholar

Education

Politecnico di Milano

M.Sc. IN COMPUTER SCIENCE & ENGINEERING
– GPA: 29.25/30

Milan, Italy

Sept. 2025 – Present

Sharif University of Technology

B.Sc. IN COMPUTER ENGINEERING
– GPA: 19.58/20 (29.37/30); major GPA: 19.82/20 (29.73/30).
– Thesis: Enhancing lesion detection (segmentation) in breast mammograms through semi-supervised learning.

Tehran, Iran

Sept. 2019 – July 2024

Research Interests

Interests Machine Learning Theory, Optimization, High-Dimensional Statistics, Reinforcement Learning

Publications

f-FUM: Federated Unlearning via Min-Max and f-Divergence

Amirhossein Bagheri*, Radmehr Karimian*, Meghdad Kurmanji, Nicholas D. Lane, and Gholamali Aminian

Under Review · 2026

Enhanced Classifier-Guided Diffusion through Information-Theoretic Regularization

Seyed Alireza Javid, Amirhossein Bagheri, and Nuria Gonzalez-Prelcic

IEEE ISIT · 2026

Enhancing Diffusion Model Guidance through Calibration and Regularization

Seyed Alireza Javid, Amirhossein Bagheri, and Nuria Gonzalez-Prelcic

NeurIPS SPIGM Workshop · 2025

f-SCRUB: Unbounded Machine Unlearning via f-Divergences

Amirhossein Bagheri*, Radmehr Karimian*, and Gholamali Aminian

ICLR DATA-FM Workshop · 2025

Semi-Supervised Learning under Self-Training via f-Divergence

Gholamali Aminian, Amirhossein Bagheri*, Radmehr Karimian*, Mahyar JafariNodeh*, Mohammad Hossein Yassaee

Tiny Papers Track at ICLR · 2024

Robust Semi-Supervised Learning via f-Divergence and α -Renyi Divergence

Gholamali Aminian, Amirhossein Bagheri*, Mahyar JafariNodeh*, Radmehr Karimian*, and Mohammad-Hossein Yassaee

IEEE ISIT · 2024

* denotes equal contribution.

Research Experience

The Alan Turing Institute

Remote

F-FUM: FEDERATED UNLEARNING VIA MIN-MAX AND F-DIVERGENCE; F-SCRUB

Nov. 2024 – May 2026

- Developed a federated unlearning framework formulated as a min-max optimization problem with f-divergence objectives.
- Evaluated the method across federated setups, showing speedups over retraining with minimal utility degradation.
- Paper currently under review at the NeurIPS main conference.
- Introduced a novel framework based on f-divergences with the SCRUB framework for machine unlearning.
- Conducted comprehensive experiments investigating different combinations of f-divergences in f-SCRUB.

Sharif University of Technology & The Alan Turing Institute

Tehran, Iran / Remote

ROBUST SEMI-SUPERVISED LEARNING VIA F-DIVERGENCE

Sept. 2023 – May 2024

- Proposed novel risk functions inspired by f-divergences and α -Renyi divergence.
- Provided an upper bound on ideal performance for metric distance.
- Proposed novel regularization terms inspired by f-divergences and α -Renyi divergence.
- Analyzed the empirical risk functions and regularizers across different scenarios and datasets under noisy pseudo-labels.

Sharif University of Technology

Tehran, Iran

B.Sc. THESIS

Jan. 2023 – May 2024; Defense: June 2024

- Thesis: Enhancing lesion detection in breast mammograms through semi-supervised learning.
- Developed a weakly supervised labeling pipeline to generate segmentation masks for unlabeled mammogram data.
- Introduced and evaluated a pipeline for using unlabeled data in lesion detection in mammograms.

Work Experience

RSO Company

Tehran

MACHINE LEARNING ENGINEER

Jul. 2024 – Oct. 2025

- Deployed LLMs in production, worked on large-scale graph data, and developed MLOps pipelines for training, deployment, and monitoring.

CommaMed Startup, Science and Technology Park, Sharif University of Technology

LUNG X-RAY SEGMENTATION RESEARCH INTERN

June 2022 – Sept. 2022

- Worked on ResUNet-based lung segmentation and semi-supervised methods for robustness to distribution shift.

Highlighted Projects

AIRIC, Politecnico di Milano

Milan, Italy

FOUNDATION MODELS FOR TIME SERIES [PRESENTATION]

Apr. 2026 – Aug. 2026

- Benchmarking foundation models against classical statistical methods for time-series forecasting.
- Studying and comparing the architectures of different foundation models for time series.

Politecnico di Milano

Milan, Italy

ONLINE LEARNING IN SERVERLESS COMPUTING

Dec. 2025 – May 2026

- Event-driven DAG simulation for NSGD-based serverless autoscaling with shared resource constraints and end-to-end workflow metrics.

Activities

Polimi Data Scientists, Data Science Club

Politecnico di Milano

EVENT TEAM MEMBER

2025 – Present

- Part of the student-led data science association at Politecnico di Milano.

Achievements

MAECI Scholarship, Ministry of Foreign Affairs of the Italian Government

Sept. 2025

Ranked 5th, Among 190 undergraduate students, Sharif University of Technology

Sept. 2024

Ranked 31st, Nationwide Universities Entrance Exam (Konkur), among 160,000 participants

June 2019

Teaching Experience

Sharif University of Technology

Tehran, Iran

TEACHING ASSISTANT AND PROJECT SUPERVISOR

Spring 2022 – Fall 2023

- Differential Privacy (graduate): project supervisor, Fall 2023.
- Signals and Systems: head TA, Fall 2022 and Fall 2023.
- Probability and Statistics: designed and graded assignments, Fall 2022 and Fall 2023.
- Linear Algebra: project supervisor; designed and graded assignments, Spring 2022 and Fall 2023.
- Artificial Intelligence and Design Algorithm: designed and graded assignments; held TA sessions, Spring/Fall 2022.

Technical Skills

Programming	Python, C++, C, Matlab, PostgreSQL, LaTeX, R, Java
Frameworks	LangChain, TGI, vLLM, Llama.cpp, SQLAlchemy, Neo4j, Git
DevOps & OS	Linux, Docker
Machine Learning	NumPy, Pandas, Scikit-learn, Matplotlib, MLflow, Seaborn
Deep Learning	PyTorch, Keras, TensorFlow
Languages	Persian (native), English (proficient; TOEFL 105: R28, L28, S27, W21).

Selected Coursework

PhD	Reinforcement Learning (28/30)
Master	Bayesian Statistics (29/30), Machine Learning (19.3/20), High-Dimensional Probability (18.6/20), Information-Theoretic Methods in Learning and Statistics (18.4/20), Stochastic Process (19/20)
Bachelor	Engineering Probability and Statistics (20/20), Linear Algebra (20/20), Discrete Structure (19.6/20), Artificial Intelligence (20/20), Design Algorithm (20/20), Advanced Information Retrieval (20/20), Introduction to Bio-Informatics (20/20)

Related Course Projects

Bayesian Statistics (Fall 2025): Bayesian modeling of transconjugation efficacy under chemical stressors.

High Dimensional Analysis (Spring 2023): Theoretical analysis of adversarial learning.

Information Theory, Statistics, Learning (Fall 2022): Application of tilted losses and α -Renyi divergence in robust learning.

Machine Learning (Fall 2021): Dimension reduction, SVMs, transfer learning, and recommendation systems.

Artificial Intelligence (Spring 2021): A*, genetic algorithms, CSP, minimax, Bayesian inference, Gibbs sampling, DNN, HMM, and RL.

Advanced Information Retrieval (Spring 2022): Classification, clustering, ranking, and advanced search of 2k articles with BERT.

Introduction to Bio-Informatics (Fall 2022): Microarray data analysis.

Data and Network Security (Spring 2023): Simplified implementation of Signal Messenger.

Compiler Design (Fall 2021): C-minus compiler.

Computer Network (Spring 2022): Streaming application using socket programming.

Operating Systems (Spring 2022): Semaphore, scheduler, and file-system components in Pintos.