

# Niccolò Ajroldi

✉ [n.ajroldi@gmail.com](mailto:n.ajroldi@gmail.com)

☎ +1 (206)-681-4527

🌐 [Niccolo-Ajroldi](#)

🌐 [Niccolo-Ajroldi](#)

## WORK EXPERIENCE

---

### Meta AI

July 2022 - August 2023

AI Resident in Fundamental AI Research (FAIR) Labs

Seattle, WA

- Developed stochastic optimizers and implemented algorithms for adaptive tuning of hyperparameters.
- Investigated factors contributing to loss explosion in AI model training.
- Gained experience in **ML optimization**, **PyTorch**, slurm, wandb and training vision and language models.

### U-Care Medical

Dec. 2021 - June 2022

ML Researcher

Turin, IT

- Developed models to forecast Acute Kidney Injury in critically ill patients.
- Implemented ML model to discriminate persistent kidney injury from transient kidney injury in ICU patients.
- Optimized **data processing** pipeline in Python, resulting in a 50% reduction in compute time.
- Responsible for statistical analysis and management of large clinical datasets.
- Created an RShiny demo, enhancing **data visualization** and facilitating product promotion to healthcare institutions.

## EDUCATION

---

### Politecnico di Milano

March 2019 - Oct. 2021

Master of Science in Mathematical Engineering & Statistical Learning

Milan, IT

- Final grade: 110/110 (GPA: 4.0)
- Thesis: [Functional Time Series Forecasting](#).
- Main courses: Algorithms and Parallel Computing, Applied Statistics, Bayesian Statistics, Machine Learning, Real and Functional Analysis, Stochastic Processes, Game Theory, Optimization.

### Politecnico di Milano

Sept. 2015 - March 2019

Bachelor of Science in Mathematical Engineering

Milan, IT

- Thesis: [Deep Learning Optimization Algorithms near Saddle Points](#).
- Main courses: Linear Algebra, Calculus I, II, III, Differential Equations, Numerical Analysis, Probability.

## TEACHING

---

### Politecnico di Milano

Sept. 2020 - Feb. 2021

Teaching assistant for the course "Algorithms and Parallel Computing"

Milan, IT

- Assisted students in laboratories on C++, OOP, parallel programming, MPI and data structures.

## PUBLICATIONS & RESEARCH

---

### Conformal Prediction Bands for Two-Dimensional Functional Time Series

[Ajroldi](#), [Diquigiovanni](#), [Fontana](#), [Vantini](#), (2023), published on *Computational Statistics & Data Analysis*.

Development of algorithms to forecast time evolving surfaces and estimate prediction uncertainty. Proposal of estimation techniques for functional autoregressive models and implementation of distribution-free uncertainty quantification tools.

[Article](#). [GitHub](#).

### Continuous and Early Prediction of Acute Kidney Injury in Critically ill Patients

[Alfieri](#), [Ancona](#), [Tripepi](#), [Rubeis](#), [Ajroldi](#), [Finazzi](#), [Cauda](#), [Fagugli](#), (2023), published on *PLOS ONE*.

This study introduces a novel ML model to continuously predict, Acute Kidney Injury episodes in Intensive Care Units using routinely-available data. The model is tested through a multi-centric, multi-national external validation procedure.

[Article](#).

### Bayesian Nonparametric Clustering of Functional Data

Implementation of a functional clustering algorithm leveraging a Dirichlet Process mixture model to identify nervous system damage in comatose patients, by clustering central nervous system response to electrical stimuli.

[Technical report](#). [GitHub](#).