Mauro Famà

Computer Science and Mathematics, PhD Candidate

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Education

2024–now **INSA Lyon**, *PhD Candidate*, Computer Science and Mathematics

2021–2024 **Politecnico di Milano**, *Master's degree*, Computer Science and Engineering

2018–2021 **Politecnico di Milano**, *Bachelor's degree*, Engineering of Computing Systems

Experience

2024 **Teaching Assistant**, *Data for the Web course*, INSA Lyon

2023–2024 **Research Intern**, *LIRIS Laboratory, Database Team*, INSA Lyon

2020–2024 **Research Scholar**, *NECSTLab*, Politecnico di Milano

2022 **Lab Tutor**, *Fundamentals of C programming course*, Politecnico di Milano

2022 **Project Tutor**, *Algorithms & Data Structures project*, Politecnico di Milano

Research projects

2023–2024 **In-Depth Study of Window Operations in Modern SPEs**, *DB*, *Master Thesis,* The project established a framework for micro-benchmarking window operations in SPEs, providing detailed insights into the performance and efficiency of windowing mechanisms, empirically validated on SoA SPEs.

2023 **Multi-GPU Eigensolver**, *HPC*, A multi-GPU solution for large-scale top-K sparse eigenproblems. The goal of sparse eigenproblems is to identify the most significant eigenvalues and their associated eigenvectors in a large sparse matrix, with this work I designed and implemented a CUDA C++ version of the Lanczos algorithm, exploiting the power and flexibility of CUDA to obtain massive parallelism.

2022–2023 **GrCUDA**, *HPC*, Open-source solution that simplifies the integration of CUDA into script languages of the Oracle GraalVM, fully developed at NECSTLab in collaboration with Oracle Labs. Working on developing new features, maintaining and managing the repository. Focusing on extending the framework for the support of tensor algebra.

2021 **ARTiCI**, *CI/CD*, Project resulting from a collaboration between NECSTLab and Oracle Labs, with the goal of achieving a Continuous Integration system that runs test suites in complex systems. The solution supports the development of research projects by leveraging computations run on Cloud Providers.

2021 **EPIC**, *Wellness*, Work-oriented virtual assistant that revolutionizes the way HR collects and processes data. It offers the tools that take care of employees and the workspace. Placed among the 90 finalists of the 2021 Switch2Product edition.

Publications

2021 **A Practical Account of Designing a Support Tool for an Educational Experience**, *Benedetta Bolis, Mauro Famà, Mirko Salaris, Marco D. Santambrogio*, 2021 IEEE 6th International Forum on Research and Technology for Society and Industry (RTSI) (IEEE RTSI 2021)

Selected University Projects

2022 **Deep Learning Project**, *ML*, Application of deep learning techniques with the most used tools in the field, the project aims at the acquisition of practical experience with the most used tools in the field by application of deep learning techniques to small dataset and application of model selection and validation techniques on simulated and real datasets.

2022 **Java EE Web Application**, *JEE/JPA*, Development project of a data-driven client-server application integrated with a relational database. The application is developed for a telecommunications company that offers prepaid online services to web users.

2021 **Multiplayer videogame**, *Java*, The goal of the project is to develop a complex software artifact after the software engineering course. The project involves developing a software version of a board game.

Hard Skills

Languages Java, C, C++, CUDA, SQL, Python – **Tools** Spark, Flink, Docker, Kubernetes, Jira, Linux