

ENRICO LATTUADA

POSTDOCTORAL RESEARCHER

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Experience

Postdoctoral Researcher, *University of Vienna, Faculty of Physics*, Prof. Roberto Cerbino | Vienna, AT

Mar 2022 - Present

- Contributed to the establishment of two laboratories within the group, specializing in Microscopy/Optics and Chemistry.
- Managed and conducted experimental investigation of non-equilibrium effects in sedimentation, measuring multiscale dynamics of samples from microscopy videos with Fourier Transformed image correlation analysis.
- Boosted group efficiency by accelerating image analysis of advanced microscopy experiments using GPU-based Fast Fourier Transform, cutting down analysis time from hours to seconds.

Postdoctoral Researcher, *Sapienza University of Rome, Department of Physics*, Prof. Francesco Sciortino | Rome, IT

Dec 2018 - Feb 2022

- Engineered an optical imaging setup for spatially-resolved dynamics measurement of colloidal samples through image correlation analysis.
- Streamlined the image analysis by writing optimized code in C++/CUDA.
- Developed DNA nanostar gels for biomedical applications and characterized their properties using advanced optical and microscopy techniques.

Education

PhD in Industrial Chemistry and Chemical Engineering, *Polytechnic of Milan* | Milan, IT | with honors | Thesis

Nov 2015 - Oct 2018

MSc in Nuclear Engineering, *Polytechnic of Milan* | Milan, IT | 110/110 (with honors) | Thesis

Oct 2012 - Apr 2015

BSc in Energy Engineering, *Polytechnic of Milan* | Milan, IT | 103/110

Sep 2009 - Sep 2012

Skills

Technical	Image Processing, Advanced Optical Techniques, Particle Image Velocimetry, Statistical Analysis, Modeling.
Programming	Python (Numpy, Pandas, Scikit-learn, Matplotlib), C++, CUDA, CMake, Matlab, Git/GitHub, LaTeX, Markdown.
Software	Windows/Linux/macOS, Fiji/ImageJ, Fusion360, LabVIEW, Blender.
Soft Skills	Adaptability, Effective Communication, Documentation, Team Player, Problem-solving, Creativity, Project Management, Time Management, Continuous Learning.
Languages	English (professional proficiency, FCE B2), Italian (mother tongue), German (basic proficiency, A1).

Projects

FastDDM

Sep 2022 - Present

Open source Python library for Differential Dynamic Microscopy analysis

- Developed an open-source Python/C++/CUDA library for the analysis of Differential Dynamic Microscopy experiments, to measure the multiscale dynamics of colloidal and biological samples from microscopy videos.
- Created an accompanying tutorial to democratize the technique.

Certificates & Training

Google Advanced Data Analytics, *Coursera* | Certificate

4 Feb 2024

Google Data Analytics, *Coursera* | Certificate

28 Oct 2023

Machine Learning for Materials Hard and Soft, *Erwin Schrödinger Institute* | Vienna, AT

11-22 Jul 2022

Fit4Funding – Your training on EU funding, *Austrian FFG* | Vienna, AT

1 Jun 2022

Introduction to version control with Git, *Microsoft Learn* | Certificate

7 May 2023

Achievements

Lise Meitner postdoctoral fellowship, FWF (Austrian Science Fund) | 177.980,00€

2022

Best poster, Italian Soft Days 3rd edition | Padua, IT

2018

Second best communication, 103rd National Congress of the Italian Physical Society | Trento, IT

2017

Other Activities

Teaching	Co-supervised and provided support to more than 20 international graduate and post-graduate students. Performed occasional teaching assistant duties.
Communication	Contributed to international conferences with >10 talks and posters. Published 10 scientific articles in well-established, international journals.