SAMUELE BALDINI

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ORCID ID   https://orcid.org/0009-0005-9565-7236
Github   https://github.com/samuelebaldini2

EDUCATION

Ph.D. in Mechanics and Advanced Engineering Sciences   [Nov 2024 – Present]
University of Bologna
Research topics: Optimal control in CFD, Modeling and simulation, Finite element method, Code coupling

Master Degree in Energy and Nuclear Engineering   [Sep 2022 – Oct 2024]
University of Bologna
Votation: 110/110 and Honors
Thesis: Coupling of fem and fvm codes for optimal control of the heat equation

Bachelor Degree in Mechanical Engineering   [Sep 2019 – Oct 2022]
University of Bologna
Votation: 108/110
Thesis: Numerical fatigue analysis using Ansys software and comparison with analytical methods

TEACHING EXPERIENCE

Academic tutor for Foundation of Informatics   [Mar. - Jun. 2025]
Course of BCs Energy Engineering at University of Bologna

CONFERENCES

COUPLED 2025   [May 2025]
XI International Conference on Coupled Problems in Science and Engineering

PUBLICATIONS

Journal Articles

- S. Baldini, G. Barbi, A. Cervone, F. Giangolini, S. Manservisi, L. Sirotti, *Optimal Control of Heat Equation by Coupling FVM and FEM Codes*, Mathematics, 2025, 13, 1-24, https://dx.doi.org/10.3390/math13020238;

- S. Baldini, G. Barbi, G. Bornia, A. Cervone, F. Giangolini, S. Manservisi, L. Sirotti, *A Finite Element–Finite Volume Code Coupling for Optimal Control Problems in Fluid Heat Transfer for Incompressible Navier–Stokes Equations*, Mathematics, 2025, 13, 1-29, https://dx.doi.org/10.3390/math13111701;

ADVANCED SCHOOL COURSES

Debugging and Optimization of Scientific Applications   [Mar. 2025]
Cineca Academy
Programming CFD in OpenFOAM   [Nov. 2024]
Cineca Academy
Summer CINECA School: dive into the World of HPC   [Jul. 2024]
Cineca Academy
Introduction to Scientific and Technical Computing in C and C++   [May. 2024]
Cineca Academy
Core Modelling for Transients   [Jan. 2024]
GRE@T-PIONEeR project

Technical Skills

Operating system: Windows, Linux
Programming languages: C / C++, Python
Software: Deal.II, OpenFOAM, Salome, Paraview

Language

Italian: Mothertongue
English: B2 [FCE Cambridge]