Nicolò Crescenzio

Curriculum Vitae

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I am currently working at the Department of Mathematics "Tullio Levi-Civita" of the University of Padova as scientific software developer. My interests are focused on numerical methods for Partial Differential Equations, computational solid mechanics, computational fluid dynamics, software development and High Performance Computing.

Education

Jan 2022 – Dec 2024 **Ph.D. in Computational Mathematics**, *Università degli Studi di Padova*
Department of Mathematics "Tullio Levi-Civita"
Thesis: Numerical Methods for the Simulation of Wave Propagation Phenomena in Linear Viscoelastic Kelvin-Voigt Materials
Supervisor: Prof. Antonia Larese

Oct 2018 – Apr 2021 **Master Degree in Mathematical Engineering**, *Università degli Studi di Padova*
Department of Civil, Environmental and Architectural Enginnering
Grade: 110/110 with honors

Sep 2015 – Sep 2018 **Bachelor Degree in Aerospace Engineering**, *Università degli Studi di Padova*
Department of Industrial Engineering
Grade: 110/110 with honors

Research & Work Experience

Jan 2025 – Now **Technical and Administrative Staff**, *Università degli Studi di Padova*
Department of Mathematics "Tullio Levi-Civita"

- Installation and updating of software packages and libraries dedicated to scientific computing and result visualization in a Linux environment.
- Management and support for scientific computing activities within a Linux HPC environment for the *SYCURI* ("Synergic Strategies for Cultural Heritage at Risk") project, including the setup and configuration of computational software for numerical simulations.

Sep 2021 – Dec 2021 **Research Fellow**, *Università degli Studi di Padova*
Department of Mathematics "Tullio Levi-Civita"

- Development of a mathematical and numerical model simulating the propagation of waves on linear viscoelastic and heterogeneous materials of Kelvin-Voigt type.

Other Activities

Tutor, *Università degli Studi di Padova, Department of Industrial Engineering*

- *Numerical Analysis* – Bachelor's Degree in Mechanical Engineering, 30h
- *Numerical Analysis* – Bachelor's Degree in Chemical and Materials Engineering, 30h

Visiting Period

During the second year of the PhD, I spent six months working at Geobrugg AG (Romanshorn, Switzerland), a company leader in the construction of flexible barriers aimed at the protection against natural hazards, such as rockfall, snow avalanches and debris flows.

Workshop organization

Co-organizer of the *Kratos Multiphysics Workshop* held at the Department of Mathematics "Tullio Levi-Civita" of the University of Padova from November 6th to November 8th, 2024, and responsible for developing and maintaining the event's official website.

Mini-symposium organization

Co-organizer of the minisymposium *"Particle-Based Methods in Applied and Industrial Sciences"* at the congress of the Italian Society of Applied and Industrial Mathematics (SIMAI) held in Matera from the 28th of August to the 1st of September 2023.

Contributed Talks to Conferences

- "Simulation of Hydrological Hazards and their Interaction with Protection Systems using the Material Point Method" (with A. Larese, L. Moreno and V. Singer), *2023 Congress of the Italian Society of Applied and Industrial Mathematics (SIMAI) – Matera, Italy*.
- "Viscoelastic Wave Propagation in Heterogeneous Media: a Spectral Approach" (with A. Larese, F. Piazzon and M. Putti), *9th European Congress on Computational Methods in Applied Sciences and Engineering (ECCOMAS 2024) – Lisboa, Portugal.*
- "Numerical Simulation of Wave Propagation in Viscoelastic Heterogeneous Materials of Kelvin-Voigt Type" (with A. Larese, F. Piazzon and M. Putti), *XI International Conference on Coupled Problems in Sciences and Engineering (COUPLED 2025) – Villasimius, Italy.*

Computer Skills

Coding	Matlab/Octave, Python, Fortran, C++, Bash, LaTeX
Other tools	Make, CMake, Slurm, Git/GitHub, Docker/Singularity
Software	Paraview, VisIt, GiD, Microsoft Office
OS	Debian/Ubuntu, MacOS

Languages

Italian	Mother Tongue
English	B2