Constantinos Menelaou

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Short Resumé

Sep. 2025–Current	**Research Assistant** University College Dublin · Ireland 📍 Continuation of the PhD work by studying more cases to of boulder transport observed in nature.
2021–Current	**PhD Candidate** University College Dublin · Ireland 📍 PhD in Applied Mathematics using Computational Fluid Dynamics to model wave impact on boulders.
2015–2020	**Mechanical Engineering with Integraded Masters** Aristotle University of Thessaloniki · Greece 📍 5 Year Degree with integrated masters. Specialisation in Fluid Mechanics, Aerodynamics, and Aircraft Design. Thesis on Hypersonic Waverider Aircroft Design.

Degrees

2025	**PhD in Applied Mathematics** PHD · UCD 🏛
2020	**Mechanical Engineer** Integraded Masters · AUTH 🏛

Certificates & Grants

2022	UCD Drone, Data Processing and Visualization Course
2021	MaREI PhD Funding
2021	CFD-FEA Course (A Hands-on Introduction to Engineering Simulations)
2021	English IETLS 2021

Teaching

UCD Tutor	ICHEC High Performance Computing
UCD Tutor	Numerical Algorithms
UCD Tutor	Statistics with Python
UCD Tutor	Mathematical Fluid Mechanics I
UCD Tutor	Analytical Mechanics
UCD Tutor	PDE for Financial Maths

</> CODE

I have gained experience reading and modifying C++ and CUDA code during my PhD (SPHinXsys and DualSPHysics solvers). Moreover, I am comfortable OpenFOAM, both source code and the solver itself. Furthermore, I am proficient in Python. I have used it for the creation of several tools and packages relevant to my PhD and most of the data analysis. I have also used MATLAB in the past (undergraduate and PhD) whenever Python or other languages were insufficient. Lastly, I am a fan of Rust which I have used for personal project such as a gym booking bot with (useless) features such as GUI and sound effects.

Programming

★★★★★	Python, C/C++, Bash, Linux, Conda, HPC
☆★★★★	CUDA, MPI, OpenMP, Rust
☆☆★★★	MATLAB

Publications

2025	Prediction of the displacement by waves of large rocks using smoothed-particle hydrodynamics (Submitted).
2025	Displacement and deposition of cliff-bottom rocks using Smoothed Particle Hydrodynamics (Draft).
2024	Wave breaking and transport of clifftop boulders, 18th International SPHERIC Workshop proceedings.
2023	Implementation of various-fidelity methods for viscous effects modeling on the design of a waverider, Aerospace Science and Technology, `https://doi.org/10.1016/j.ast.2023.108141`.

Conferences

2025	2nd European Fluid Dynamics Conference, 2025, University College Dublin, Dublin, Ireland.
2024	Multiphase, Duisburg, Germany.
2024	18th International SPHERIC Workshop, Berlin, Germany.
2023	3rd International Workshop on Waves, Storm Surges, and Coastal Hazards Incorporating the 17th International Waves Workshop, University of Notre Dame, Notre Dame, Indiana, USA.
2022	National High-Performance Compute and Data Ecosystem Symposium (HiCoDES), Dublin, Ireland.
2022	6th DualSPHysics Workshop, Universitat Politècnica de Catalunya, Barcelona, Spain.