









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 Integrated Masters ARISTOTLE UNIVERSITY OF THESSALONIKI · Greece  5 Year Degree with integrated masters. Specialisation in Fluid Mechanics, Aerodynamics, and Aircraft Design. Thesis on Hypersonic Waverider Aircraft Design.

DEGREES

2025	PhD in Applied Mathematics PHD · UCD 
2020	Mechanical Engineer INTEGRATED 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

PROGRAMMING

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

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.

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.