Constantinos Menelaou

Nationality: Greek Cypriot
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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

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.