Tomás Cuevas López

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ABOUT ME

Coastal engineer specialized in numerical modeling of coastal processes and scientific programming. Detail-oriented with strong writing and oral communication skills. My career goals are to continue developing knowledge in the intersection of coastal process modeling, programming, and geospatial analysis; and to improve the communication of coastal hazards with communities and stakeholders. Native Spanish and advanced English level.

EDUCATION

M.Sc. in Coastal Engineering
North Carolina State University
Jan. 2022 - Feb. 2024

B.Sc. in Civil Engineering
University of Chile
Mar. 2010 - Jun. 2016

OLAFLOW Certificate
Tailored course with P. Higuera (dev)
Mar. 2021

PROGRAMMING

Python. Proficiency in machine learning, geospatial analysis, and data visualization. Libraries: PyTorch, scikit-learn, Pandas, NumPy, GeoPandas, Xarray, and Matplotlib.

SOFTWARE AND HPC

MIKE by DHI: Expertize in many coastal models.

ADCIRC: Storm surge simulations for ocean-scale domains.

OLAFLOW: Wave-structure interaction, overtopping, and run-up.

OpenFOAM: Simulation of ocean-water intake process and pipe flows.

Geographic Information System:
QGIS | Grass GIS | ArcGIS

High Performance Computing:
Hazel, NC State University
Anvil, Purdue University
Stampede2, TACC

TEACHING ASSISTANT

Hydraulics, NC State University, 2022.
Coastal Engineering, University of Chile, 2015 to 2021.
Analysis of Environmental Systems, University of Chile, 2015.
Environmental Engineering, University of Chile, 2015.

WORKING EXPERIENCE

DHI Water & Enviroment Inc.

Coastal Scientist Feb. 2022 to present

- Marine and Coastal, Americas. Numerical modeling of coastal processes, port engineering, data analytics, and machine learning.

North Carolina State University

Research assistant Jan. 2022 to present

- Coastal Resilience Center, Department of Homeland Security. Development of Python scripts to increase the resolution and accuracy of storm surge predictions as a postprocessing step.
- M.Sc. thesis: Prediction of Peak Water Levels during Tropical Cyclones with Deep Learning.

PRDW Consulting Ports and Coastal Engineers

Project engineer | Santiago, Chile Apr. 2019 to Dec. 2021

- Numerical modeling of coastal processes team. Specialized in hydrodynamic (2D and 3D), tsunami, sediment transport (sand and mud), and wave (phase average and resolving) modeling. Experienced with computational fluid dynamics (CFD) models to study overtopping, run-up, and wave-structure interactions.
- Data Science team. Specialized in Python programming in topics related to coastal engineering and metocean data. Experienced in applying machine and deep learning algorithms and probabilistic analysis in coastal and port engineering. Proficiency in data visualization, computational vision, and big data.
- Port and Harbors team. Specialized in numerical modeling of the dynamic response of moored vessels. Experienced doing stochastic modeling of port operations.

Assistant engineer | Cape Town, South Africa Sep. 2018 to Mar. 2019

- Numerical modeling of coastal processes team. Specialized in hydrodynamic (2D and 3D), tsunami, sediment transport (sand and mud), and phase-averaged wave modeling. Experienced with computational fluid dynamics (CFD) models to study overtopping, run-up, and wave-structure interactions.
- Data Science team. Specialized in Python programming in topics related to coastal engineering and metocean data. Experienced in data visualization, computational vision, and big data.

Assistant engineer | Santiago, Chile Jul. 2016 to Aug. 2018

- Numerical modeling of coastal process team. Specialized in hydrodynamic (2D and 3D), tsunami, and phase-averaged wave modeling.

CONFERENCES

3rd International Workshop on Waves, Storm Surges, and Coastal Hazards South Bend, USA | Oct. 2023
Prediction of High-resolution Maps of Storm-driven Coastal Flooding Using Deep Learning (oral presentation).

U. S. National Congress on Computational Mechanics Albuquerque, USA | July 2023
Prediction of High-resolution Maps of Storm-driven Coastal Flooding Using Deep Learning (oral presentation).

ADCIRC Users Group Meeting Baton Rouge, USA | June 2023
Prediction of High-resolution Maps of Storm-driven Coastal Flooding Using Deep Learning (oral presentation).

AWARDS

Scott C. Hagen memorial award for most outstanding oral student presentation. ADCIRC Users Group Meeting, June 2023.

Scholarship from the Chilean National Program for Graduate Studies, 2022.

Graduate Merit Award. Department of Civil, Construction, and Environmental Engineering; North Carolina State University, 2022.

Sloan Graduate Student package.Department of Civil, Construction, and Environmental Engineering; North Carolina State University, 2022.