

# Maria Venolia

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## EDUCATION & LICENSING

**STEVENS INSTITUTE OF TECHNOLOGY, Department of Ocean Engineering**, New Jersey 2020- 2025

**PhD in Ocean Engineering, Masters in Ocean Engineering**

Provost Fellowship Recipient, Advisor: Dr. Reza Marsooli, **GPA: 3.953/4**

**UNIVERSITY OF PATRAS, Department of Civil Engineering**, Patras, Greece 2015- 2020

**Integrated Bachelor's & Master's in Civil Engineering**

**GPA: 8.28/10 (top 1%) - Certificate of Excellence accompanied by monetary prize**

Professional License issued by the **Technical Chamber of Greece** ID: 162403 2023

## RESEARCH & EXPERIENCE

**Stevens Institute of Technology**

*Doctoral Dissertation-Thesis*

2025

Wind Wave Climatology Analysis of the Western North Atlantic Ocean Using a Spectral Approach

<https://www.proquest.com/docview/3254023288?pq-origsite=gscholar&fromopenview=true&sourcetype=Dissertations%20&%20Theses>

*Research Assistant*

2022-2025

- NDBC spectral wave buoy data acquisition for two dimensional-frequency direction wave spectrum construction
- Watershed partitioning algorithm application and wave system/wave family identification
- Long term trends and variability analysis of spectral wave family characteristics, wave family - Climate Index correlation identification
- Wave family identification and characteristics investigation at buoy sites along the U.S. East and Gulf coasts
- Calibration and validation of SCHISM for oceanographic modeling in the Western North Atlantic
- Using SCHISM to perform numerical experiments on current effects on wave propagation and spectral wave energy density distribution

**Stevens Institute of Technology**

*Teacher's Assistant*

2022-2025

- **Recitation in Fluid Mechanics** course
  - delivered in depth explanations on applications of theoretical concepts covered in class
  - assisted students with assigned homework questions during office hours
  - assisted in grading exams, providing constructive feedback to students to enhance understanding
- **Fluid Mechanics Laboratory** instruction
  - demonstrated and ensured proper use of apparatus within laboratory setting as well as assisted undergraduate students in taking measurements and analyzing data
  - evaluated submitted lab reports and team presentations

**University of Patras, Civil Engineering Department**

*Undergraduate Diploma Dissertation- Thesis*

2019-2020

Hydrodynamic behavior of an array of low-crested detached breakwaters on coastal protection via coupled numerical simulation of waves, currents, sediment transport and bed morphodynamics using MIKE 21

supervised by the Head of the Civil Engineering Department of the University of Patras at the time, Dr. Athanassios Dimas

## PUBLICATIONS

- Venolia M., R. Marsooli., J. Portilla-Yandún. **Historical Change and Variability of Spectral Wind Wave Climate in the New York Bight**. *International Journal of Climatology*, <https://doi.org/10.1002/joc.8408> <https://onlinelibrary.wiley.com/share/author/5CAFF5X8MQU9E2AXIZQY?target=10.1002/joc.8408>
- Venolia M., R. Marsooli. **Wave Family Climatology of the U.S East and Gulf Coasts**, *Applied Ocean Research* <https://doi.org/10.1016/j.apor.2025.104593> [https://authors.elsevier.com/sd/article/S0141-1187\(25\)00180-4](https://authors.elsevier.com/sd/article/S0141-1187(25)00180-4)
- Venolia M., R. Marsooli, J. R. Calzada. **A Validated Coupled Three-Dimensional Hydrodynamic and Wave Model for Water Levels and Wind Waves in the Western North Atlantic Ocean**, *submitted to Ocean Science Journal*, arXiv preprint <https://doi.org/10.48550/arXiv.2505.18803>
- Venolia M., R. Marsooli. **Investigating the Effects of the Gulf Stream on Spectral Wave Characteristics Using a Coupled Three-Dimensional Hydrodynamic and Wind-Wave Model**, *submitted to Ocean Dynamics*

## **CONFERENCE PRESENTATIONS**

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- **AGU Ocean Sciences Meeting 2024, New Orleans, LA** 02/20/2024  
*Poster Presentation: Wind Wave Climatology along the U.S. East and Gulf Coasts based on Spectral Wave Family Characteristics*  
Stevens Institute of Technology Graduate Conference Funding \$1500 award
- **New Jersey Climate Research Symposium, Rutgers University, New Brunswick, NJ** 06/02/2023  
*Oral presentation: Climatology of Wind-Generated Wave Families off the New Jersey Atlantic Coast*
- **AGU Fall 2022 Meeting, Chicago, IL** 12/12-15/2022  
*Poster Presentation: Long Term Trends and Variability of Spectral Wave Systems in the New York Bight*

## **FOREIGN LANGUAGES & CERTIFICATIONS**

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Greek Language - Native speaker

**ASCE Student Chapter Award for Outstanding TA Award** 05/11/2025

**ORDER OF THE ENGINEER** *ordained on* 12/04/2024

**TOEFL ENGLISH LANGUAGE EXAMINATION iBT** 11/09/2019

*Over-all Score : 110/120 Speaking: 29/30, Listening: 28/30, Reading 27/30, Writing: 26/30*

**GRE EXAMINATION** 11/14/2019

*Verbal Reasoning : 148 /170 (37<sup>th</sup> percentile), Quantitative Reasoning: 156/170 (60<sup>th</sup> Percentile)*

*Analytical Writing: 4.5/6 (81<sup>st</sup> percentile)*

**UNIVERSITY OF MICHIGAN, MICHIGAN, USA**

*Certificate of Proficiency in English* 11/2012

## **SPECIALIZED SKILLS**

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*Programming Languages/Platforms:* Python, MATLAB

*Programs:* ArcGIS, AutoCAD, Mike21, SCHISM

*Microsoft Office:* Excel, Power Point, Word, Publisher

*Operating Systems:* Windows 7,8,10, Linux, Macintosh

## **SEMINARS & SITE VISITS**

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- Stevens Institute of Technology Civil Environmental & Ocean Engineering Research Fair 02/14/2024
- Rutgers Climate Symposium 2023, New Jersey 11/15/2023
- Waterfront Alliance Conference, New York 05/08/2023
- Stevens Institute of Technology trip to USACE NY District Head Quarters and USACE Rockaway Peninsula project sites 06/16/2023
- Stevens Institute of Technology trip to Cattus Island County Park, Toms River, NJ Living Shorelines Project Design 04/23/2021
- *Hydraulic Works-* Seminar – Dean of the Department of Civil Engineering University of Patras 12/04/2019
- Dam of Kremasta - Hydroelectric Power Plant, Aetoloacarnania, Greece 03/2017

## **INTERESTS- ACTIVITIES**

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- ASCE, AGU Member
- Byzantine music
- Latin Dancing – 9 years

## **REFERENCES**

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### **Dr. Reza Marsooli**

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Dept. of Civil, Environmental & Ocean Engineering  
Stevens Institute of Technology  
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### **Dr. George Korfiatis**

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### **Dr. Athanasios Dimas**

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### **Dr. Andreas Langousis**

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