Matheus Fagundes

Engineer

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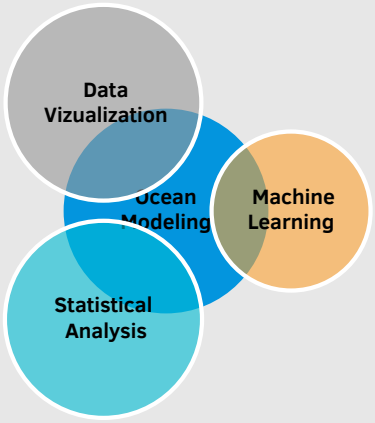
Technical Skills

Overview



Programming

Python • Linux/Unix

MATLAB • LaTeX • R

SQL • FORTRAN

Education

PhD candidate in Engineering (GPA 3.49)
Specialization: Water and Environment
University of Georgia
2019 - Present | Georgia, US
***NSF* Graduate Research Fellow**

MSc., Marine Sciences
University of Georgia
2016 - 2018 | Georgia, US
***NSF* Graduate Research Fellow**

BsA., Oceanography and Limnology
Universidade Federal do Maranhao
2010 - 2016 | Maranhao, Brazil

Experiences

Internships

- **Summer 2022** - Hydrodynamic and wave modeling, and AI at Michael Baker.
- **Summer 2014** - Regional Ocean modeling training at INPE.
- **Summer 2012** - Quantifying Potential Energy in Internal Gravity Waves at Memorial University.

Courses

- Modeling, Statistical Analysis, and Uncertainty; Data Analysis for Geoscientists; Advanced Fluid Mechanics; Transport and Mixing in Natural Flows; Climate and Mathematics; Data Mining(audited); Modeling Earth's Climate System; Applied Regression Analysis.

Hackatons

- **JPMorgan 2021** - Data for good hackaton.
- **OceanHackWeek 2019** - Project - 21st Century Prediction of Fish Larvae Catch Using ML (github).

Research

2019 - Present — **PhD. Candidate, Graduate Research Assistant** — University of Georgia
Dissertation: Name to be determined
- Model development of a Blue Carbon ecosystem (Kelp forest).
- Model development of respiration and Oxygen production for kelp forest.
- Physical impact of a high-drag ecosystem on the pCO_2 and Acidification.
- **Tools**: Python, scikit-learn, pandas

2016 - 2018 — **MSc. Candidate, Graduate Research Assistant** — University of Georgia
Thesis: Exposure of nearshore organisms to climate stressors in the upwelling region of Monterey Bay (see publication below)
- Proposed the inclusion of high frequency variability when downscaling Global Climate simulations.
- Simulation, Validation, Analyses of ocean dataset. Delivered over 4000 lines of code.
- PCA, Bootstrapping, Monte Carlo, Linear/Logistic regression.
- **Tools**: Python, scikit-learn, pandas

Publications

Monismith, S., Alnajjar, M., Daly, M., Valle-Levinson, A., Juarez, B., Fagundes, M., Bell, T., Woodson, C.B. **Kelp Forest Drag Coefficients Derived from Tidal Flow Data**, 2022. https://link.springer.com/article/10.1007/s12237-022-01098-2.

Valle-Levinson, A., A. Daly, M.; Juarez, B.; Fagundes, M.; Woodson, C. B.; Monismith, S. G. **Influence of kelp forests on flow around headlands**, Journal: Science of the Total Environment, 2022. https://www.sciencedirect.com/science/article/abs/pii/S0048969722010440.

Omidvar, S.; Fagundes, M.; Woodson, C.B. **Modification of internal wave generation and energy conversion in the nearshore due to tide-tide and tide-wind interactions**, JGR Oceans, 2022. https://agupubs.onlinelibrary.wiley.com/doi/abs/10.1029/2021JC017986.

Fagundes, M. *et al.* **Downscaling global ocean climate models improves estimates of exposure regimes in coastal environments**, Nature *Scientific Reports*,2020. https://www.nature.com/articles/s41598-020-71169-6