
I am a Civil Engineer specializing in coasts and oceans, currently employed under a contract for the ASIPONA-Progreso Port as an engineering advisor; the contract concludes in Dec/2023. I have a great passion for coastal processes, sediment transport, and wave dynamics. Over the past years (2/2021 to 8/2023) I have gained extensive experience working as an independent consultant and subsequently as an Engineer, making significant contributions to the field of coastal and ocean engineering. Utilizing numerical models (e. g. Delft3D, SWAN, SWASH) I have successfully conducted research and developed technical documents that I have presented to both specialist and non-specialist stakeholders. It is part of my ambition to have a license to become an Engineer-in-Training, furthering my commitment to excel in this dynamic field.

(a) Education and training

- **Teacher assistant for the subject “Alterations in coastal systems”** (at UNAM, employ #910127, sep/2023 – Dec/2023).

The subject aims to equip the student with an understanding of the primary alterations in coastal systems to comprehend global processes and coastal zone management. The course also introduces and trains students in techniques, evaluation methods, monitoring programs, and models used to study anthropogenic alterations in coastal systems.

(b) Work experiences

- **Providing consultancy services** for the preparation of a feasibility study and preliminary design aimed at improving the infrastructure and mitigating floods along the southwest coast of Grenade. (independent consultant).

Outcomes: Wave and tidal analysis. Constructed and validated a Delft3D model to characterize currents, sediment transport and coastal flooding. Conducted an analysis to assess the viability and practicality of current coastal infrastructure and developed a preliminary design concept for an improved proposed infrastructure. Presented results to stakeholders.

- **Met ocean characterization** aiming to assess feasibility of low-impact bungalows at Long Island, Bahamas. (independent consultant).

Outcomes: Successfully investigated the current and long-term variability of normal and extreme wave characteristics, while reviewing coastline changes using satellite images (CoastSat - Python). Presented results to stakeholders.

- **Consultant services to characterize waves and currents** around Cay Crawl, Belize, for the development of low-impact infrastructure. (Engineer at AxisIMA, Jul 2022 – Jan 2023)

Outcomes: Extracted and analysed wave and tidal series. Constructed, validated, and automated a Delft3D model to characterize possible development sites around the island. I also participated in data acquisition and data curation for bathymetry, topography, and currents. Presented results to stakeholders.

- **Comprehensive Investigation of tidal currents** inside the Ria Celestún, Yucatan, Mexico, to assess the current and possible environmental dynamics. (Consultant at UNAM-II, Puerto de Abrigo S/N UNAM, 97355 Sisal, Yucatan)

Outcomes: Constructed, validated, and automated a Delft3D model to characterize existing tidal currents inside the Ria. Propose and investigate changes (deepening of channel and/or removing existing infrastructure) to improve water movement and sediment transport. I participated in data acquisition and data curation for bathymetry, topography, conductivity, temperature, and water levels.

(c) Education

National Autonomous University of Mexico	Civil Engineer	Ph.D. (pending graduation)
National Polytechnic Institute	Civil Engineer	M.Eng. <i>Graduated with Honors</i> , 2016
National Polytechnic Institute	Civil Engineer	B. Sc. 2012

(d) Employment

Sep 2023 – Dec 2023	Engineering advisor, ASIPONA-Progreso, Yucatan. And Teacher assistant at UNAM-ENES, Merida, Yucatan.
Feb 2023 – Aug 2023	Consultant, UNAM-II, Sisal.
Jul 2022 – Jan 2023	Engineer at AxisIMA.
Jan 2021 – Jun 2022	Independent consultant.

(e) Skills

Language: Spanish (native language). English (advanced). Italian (basic)

Computer Skills: Delft3D, SWAN, SWASH, XBeach, MATLAB, Python, Fortran, GIS, Pix4d/Agisoft, Linux and Bash, Microsoft Office. Computer assembly skills.

(f) Other activities

1. Teaching/Student Supervision: Bachelor and MSc dissertation projects.
2. Assistance to students with: Coastal dynamics, Coastal Modelling, GIS, MATLAB/Python.
3. Invited Speaker: Laboratorio de Ingeniería y Procesos Costeros.
4. Collaborated in a PAPIIT project (#IA101121, at UNAM), with a scholarship. The project aimed to describe the nearshore coastal currents in the Yucatan Peninsula.
5. I have used and analysed ADCP's (AWAC's and RiverRay), as well as RTK-DGPs.
6. Field Campaign Coordinator (at UNAM) for the measurement of coastal parameters (flow, currents, waves, water levels, conductivity, temperature, pressure).
7. I have a valid driving license and vast experience driving vehicles.

(g) References

(h) Publications

Paladio-Hernandez, A., Salles, P., Arriaga, J., & López-González, J. (2022). 'Characterization of the Morphological Behaviour of a Sand Spit Using UAVs'. *Journal of Marine Science and Engineering*, 10(5). URL: <https://doi.org/10.3390/jmse10050600>

Pacheco-Castro, R., Salles, P., Canul-Macario, C., & Paladio-Hernandez, A. (2021). 'On the understanding of the hydrodynamics and the causes of saltwater intrusion on lagoon tidal springs.'. *Water (Switzerland)*, 13(23), 9–11. URL: <https://doi.org/10.3390/w13233431>