

Guilherme Castelão

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PROFILE

A physical oceanographer and offshore sailor with experience developing data pipeline.

I code novel solutions to explore my scientific interests, which often result in Open Source packages with industry standards. I also enjoy mentoring and teaching best practices in scientific computing to scientists.

EDUCATION

RSMAS - UNIV. OF MIAMI
PH.D. PHYSICAL OCEANOGRAPHY
2011 | Miami, FL

IOUSP- UNIV. OF SÃO PAULO
M.Sc. PHYSICAL OCEANOGRAPHY
2002 | São Paulo, Brazil

UNIV. OF RIO GRANDE
BS IN COASTAL MANAGEMENT
BS IN RENEWABLE RESOURCES
2000 | Rio Grande, Brazil

CERTIFICATIONS &

AWARDS

- 2019 Certified Carpentries Instructor Trainer
- 2017 Certified Carpentries Instructor
- 2011 Startup selected by Pinboard Investment
- 2011 JGR's highlighted paper

LINKS

Github:// [castelao](#)
LinkedIn:// [Guilherme Castelão](#)
Twitter:// [@SamplingGUI](#)
Google Scholar:// [G.P. Castelão](#)

EXPERIENCE

SCRIPPS INST. OF OCEANOGRAPHY | ASSOC. ACADEMIC SPECIALIST-II
2017 - 2022 | La Jolla, CA

- Real-time data pipeline including platforms health monitoring system, data archiving and dissemination (Python, PostgreSQL, AWS, REST API, Git, Ansible, ...)
- Novel methodology to calibrate chlorophyll fluorescence from underwater gliders using remote sensing chlorophyll (Custom parallelization, Bayes, Pandas/Xarray ...)
- Automatic Quality Control procedures including Machine Learning (Python)
- Iridium SBD server - Satellite communication for Argo and Spray (Rust)
- Iridium RUDICS server & protocol - BGC-Argo communications (Rust)
- International committees on data standards and procedures (CF-NetCDF, QC, ...)

AOML - NOAA | LEADING SYSTEM DEVELOPER & DATABASE MANAGER
2006 - 2008 | Miami, FL

Real-time and delayed mode data pipeline with automatic quality control for NOAA's TSG operations. Flexible parsing for heterogeneous data acquisition, and transmission to GTS as BUFR. (PostgreSQL, PL/pgSQL, Python, SVN, ...)

LAHIMAR | LEADING SYSTEM DEVELOPER
2002 - 2004 | Brazil

A real-time data flow system for a Waverider from remote station acquisition to a dynamic website for visualization (MySQL, PHP, Perl, Apache, & OpenBSD firewall).

RESEARCH

SCRIPPS INST. OF OCEANOGRAPHY | POSTDOCTORAL SCHOLAR
2016 - 2017 | La Jolla, CA

Migrated the Spray underwater glider dataset to netCDF-CF files for data dissemination. Created a cloud infrastructure (mostly AWS) for IDG in a wide range of services including dynamic websites, databases, dedicated email server, dedicated ERDDAP server, and others, managed with Ansible.

OC. INST. OF THE UNIV. OF SÃO PAULO | POSTDOCTORAL SCHOLAR
2013 - 2015 | Brazil

Study on the impact of mesoscale eddies on the sea surface heat fluxes; Machine learning technique to QC oceanographic data; Ran GFDL climate model on HPC.

NATIONAL INST. FOR SPACE RESEARCH (INPE) | RESEARCHER
2011 - 2012 | Brazil

Development of the quality control system for CTDs used at INPE. Database manager of observed data (CTDs, ARGO, XBT and others) for model validation. Development of the Brazilian Earth System Model (based on GFDL's MOM, FORTRAN).

LATEST WORK

Complete list on Google Scholar.

- [1] **Castelão, G. P.** OceanColor: A python package to co-locate NASA's chlorophyll data with in-situ observations. 2022. *in prep.*
- [2] **Castelão, G. P.** and L. C. Irber Jr. TEOS-10 Gibbs sea water toolbox for microcontrollers. *Journal of Open Source Software*, 2021. *in prep.*
- [3] **Castelão, G. P.** and D. L. Rudnick. A climatology of chlorophyll fluorescence from Spray underwater gliders in the California Current region. 2021. *in prep.*