

# Dr Callum Rollo

I am a data scientist and oceanographer. I design, implement, and maintain pipelines for oceanographic data. I work at the interface between earth science and open source, bringing the best practices of one community to my work in the other. Coming from a non computer science background, I am self taught and have developed effective strategies to up-skill and find the most effective tool to solve the problem at hand. I have a proven track record of software development in an academic environment.

## Employment and education

- Nov 2021–present **Data engineer** — *Voice of the Ocean Foundation* — Building and maintaining automated data processing, quality control and delivery services for oceanographic data from autonomous platforms.
- May–Aug 2021 **Google Summer of Code** — *US Integrated Ocean Observing System* — Improving erddapy and gliderpy codebases to make ocean data more accesible through ERDDAP.
- Jan–Mar 2021 **Internship, Glider Facility** — *University of East Anglia* — Norwich, UK — Refurbished underwater gliders, integrated sensors, built glider piloting website, migrated servers.
- 2017–2021 **PhD in Oceanography** — *University of East Anglia* — Norwich, UK — Supervisors: Prof. Karen J Heywood, Dr. Robert Hall and Dr. Alexander Phillips. Expected submission May 2021. Thesis title: **Estimating shear from a glider mounted acoustic Doppler current profiler.**
- 2013–2017 **Integrated Master of Science (MSci) Geophysics** — *University of Southampton* — Southampton, UK — Third year at Utrecht University, Netherlands. Supervisor: Dr Nicholas Harmon. Thesis title: **Ambient Noise Tomography in the Sumatra Subduction Zone.**

## Publications and conferences

- Oct 2022 **Rollo. C.**, Heywood, K.J., Hall, R. — Glider observations of thermohaline staircases in the tropical North Atlantic using an automated classifier *Geoscientific Instrumentation, Methods and Data Systems*.
- Jun 2020 **Rollo. C.**, Heywood, K.J., Hall, R., Barton, E., Kaiser, J. — Glider Observations of the Northwestern Iberian Margin During an Exceptional Summer Upwelling Season *JGR:Oceans*.

### Selected oral and poster presentations

- Apr 2019 **Absolute velocity estimates from a glider mounted ADCP** (PICO presentation) — EGU General Assembly — Vienna, Austria — Oral.
- Apr 2019 **Glider observations of an eastern boundary slope current and upwelling system** — Challenger Society Coastal Processes Special Interest Group — University of East Anglia, UK — Oral.
- Sep 2018 **Glider observations of an eastern boundary slope current and upwelling system** — Challenger Conference — Newcastle University, UK — Oral.

### Convener and editorial service

- May 2020 **Convener of session OS4.1** — Open session on ocean processes and techniques — Sharing Geoscience Online — EGU General Assembly, Vienna, Austria.
- 2019- **Reviewer** — *Journal of Physical Oceanography* x2.

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## Fieldwork Experience

- Jan–Mar 2022 **ITGC field campaign aboard the R/V *Nathaniel B. Palmer*** — *Southern Ocean* — International Thwaites Glacier Collaboration investigating basal glacial melt.
- Preparation, testing, launch and recovery of Seagliders and a SeaExplorer.
  - Assisting mud sampling and seal tagging teams.
  - Designed a web app to run on ship network displaying locations of samples from several groups and nrt ice imagery.
- Jan–Mar 2020 **EUREC4A field campaign aboard the R/V *Meteor*** — *Barbados* — International collaboration to better understand the formation of shallow trade wind cumuli.
- Preparation, testing and launch of a 3.5 m autonomous surface vehicle.
  - Preparation, testing, launch and recovery of two Seagliders.
  - Shift leader taking CTD casts and water samples.
  - Live location tracking of UEA platforms, automated NRT data sharing and processing.
- Apr 2019 **Hydrographic survey on MRV *Scotia*** — *North Sea and Faeroe Shetland Channel*.
- Taking CTD casts and biogeochemical sampling.
  - Deployment and recovery of a Seaglider for which I had sole responsibility.
- Nov 2018 **ADCP Glider trials** — *Loch Etive, Scotland* — Collaboration between University of East Anglia and British Antarctic Survey.
- Planned a trial mission of an ADCP glider, including sensor setup
  - Sole responsibility for preparation, deployment and recovery of a Seaglider

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## Skills and Expertise

### Computer Skills

**OS:** Linux·Windows·Unix

**Document prep:** L<sup>A</sup>T<sub>E</sub>X·Markdown

**Languages:** Python·MATLAB·Julia

**Misc:** git·SQL·shell scripting·CI

### Languages

**English:** Native speaker

**Spanish:** C1-level

**Swedish:** B1-level

**French:** A2-level

**Italian:** B1-level

### Vocational Training

- Aug 2020 **Ocean Hack Week** — *Univeristy of Washington (online)* — Week long hackathon. Included training and a group project to create an ERDDAP glider data fetcher.
- Jul 2019 **FDSE Environmental fluid dynamics summer school** — *Ecole Polytechnique, Paris* — Two week course on fluid dynamics including lectures, computer labs, practical experiments and a group presentation.
- Jul 2019 **Eastern Boundary Current Systems (EBUS) summer school** — *ICTP Trieste, Italy* — 1 week of lectures and practicals on the physical, chemical and biological processes of the coupled ocean-atmosphere EBUS system.
- May 2018 **Glider training course** — *UEA, Norwich, UK* — Training in the functioning, maintenance, piloting and data processing of Seagliders.

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## Teaching

- 2019–present **Scientific Python** — Group leader — University of East Anglia — Python support across the science school. I organise talks, host drop-ins, test software and run the website.
- 2019–2020 **Professional development courses: Python for scientists** — Course design and delivery — University of East Anglia — Courses attended by PhD students, faculty members and technicians. Including a 3 day course in collaboration with Cefas.
- 2018–2019 **Teaching assistance** — Glider training course, mathematical methods for scientists, introduction to oceanography, applied geophysics — University of East Anglia.