AIMOCC at ECAI 2024

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AI: Modeling Oceans and Climate Change 2024

An ECAI 2024 Workshop

It is our distinct pleasure to invite you to the **Workshop AI: Modeling Oceans and Climate Change (AIMOCC 2024)** to be held in conjunction with the **27th European Conference on Artificial Intelligence (ECAI 2024)** on October 19-24, 2024 in Santiago de Compostela, Spain.

The Anthropocene has brought along a drastic impact on almost all life forms on the planet. Considering the importance and amount of water in this speck of dust in the middle of nowhere that we inhabit, we should have called it Planet Ocean. Oceans are not only important because of their volume but are also about the functions and contributions they provide to biodiversity, the human species included.

The goal of this workshop is to bring together researchers that are interested and/or applying AI and ML techniques to problems related to marine biology, modeling, and climate change mitigation. We also expect to attract natural science researchers interested in learning about and applying modern AI and ML methods. Consequently, the workshop will be a first stone on building a multi-disciplinary community behind this research topic, with collaborating researchers that share problems, insights, code, data, benchmarks, training pipelines, etc. Together, we aim to ultimately address an urgent matter regarding the future of humankind, nature, and our planet.

Topics

Topics of interest of this workshop can be grouped into two sets:

1. Addressing and advancing the state of the art in areas like AI, ML, mathematical modeling and simulation. Here the focus is set on:

    - improving neural network handling of graph-structured information,
    - improving the capacity of ML methods to learn in small data contexts,
    - understanding causal relations, interpretability and explainability in AI,

- integrating model-driven and data-driven approaches, and
- to develop, calibrate, and validate existing mechanistic models.

2. Focus on answering the questions from the application domain, where the main questions to be addressed are:

  - Which are the major patterns in plankton taxa and functional diversity?
  - Which are the major drivers of patterns, and how do they interact?
  - How these patterns and drivers will likely change under climate change?
  - How will these changes affect the capacity of ocean ecosystems to sequester carbon from the atmosphere, that is the biological carbon pump?
  - What relations bind communities and local conditions?
  - What are the links between biodiversity functioning and structure?
  - How modern AI and computer vision can be applied as research and discovery support tools to understand planktonic communities?
  - How new biological knowledge can be derived from the application of anomaly detection, causal learning, and explainable AI.

Submissions

We welcome submissions of:

- **full papers** (8 pages, not counting references) and
- **short summary papers** (4 pages, not counting references).

Papers must be written in English and in PDF format according to the ECAI'24 LaTeX template. All submitted papers will be under a single-blinded peer review for their novelty, technical quality and impact. The submissions can contain author details.

Links

- Workshop information at ECAI 2024: https://www.ecai2024.eu.
- Call for papers and further information (this page): https://oceania.inria.cl/#aimocc-2024.
- Shareable call for papers as `.pdf`: LINK.
- Shareable call for papers as `.txt`: LINK.
- AIMOCC 2024 CMT submission site: https://cmt3.research.microsoft.com/AIMOCC2024.

Important dates

- Submission deadline: **August 15, 2024 (UTC-12).**
- Notification of acceptance: **August 31, 2024.**
- Reception of final version: **September 15, 2024.**

Post-proceedings publication

We will seek to publish selected, revised, extended papers later in a planned post-proceedings volume, to be published in the Lecture Notes in Artificial Intelligence (LNAI) series. The selection of papers will be managed by a subset of the workshop organizing committee.

Organizers

- **Nayat Sánchez-Pi**, Inria Chile Research Center.
- **Luis Martí**, Inria Chile Research Center.

Scientific committee

- **José Manuel Molina**, Universidad Carlos III de Madrid,
- **Julien Salomon**, ANGE, Inria Paris,
- **Jacques Sainte-Marie**, ANGE, Inria Paris,
- **Olivier Bernard**, BIOCORE, Inria Sophia-Antipolis,
- **Michèle Sebag**, TAU, Inria Saclay,
- **Marc Schoenauer**, TAU, Inria Saclay,
- **Pablo Marquet**, Pontificia Universidad Católica de Chile (PUC),
- **André Abreu**, Fondation TARA Océan,
- **Ana Cristina Garcia Bicharra**, Unirio - Federal University of Rio de Janeiro State,
- **Hernán Lira**, Inria Chile Research Center,
- **Luis Valenzuela**, Inria Chile Research Center,
- **Leandro Fernandes**, Universidade Federal Fluminense,
- **Roberto Santana**, University of the Basque Country (UPV/EHU),
- **Colomban De Vargas**, GO-SEE CNRS Federation, and
- **Damien Eveillard**, ComBi, Université de Nantes.

Diversity commitment

We will seek diversity in all aspects, both in school of thought, nationalities, stages in the academic career, etc.

Access

We will publish the accepted papers and talk abstracts (before the event) and the slides of the speakers (after the event) on the workshop website. We will include a bibliography of most relevant research papers to facilitate cross-pollination of ideas between these fields. Similarly, we will record the workshop and publish it online.