



Ícaro A. Fonseca

Nationality: Brazilian | **Gender:** Male | **Website:** <https://www.icarofonseca.com/>

● WORK EXPERIENCE

01/2022 – CURRENT Bærum, Norway

BUSINESS TECHNOLOGIST WILHELMSEN SHIP MANAGEMENT

Hecla Emissions Management (2023 - Present):

- Collaborated to specify, rollout and maintain Hecla's first digital product (EU ETS), starting from company inception until after it reached over 1000 subscribed vessels.
- Created roadmaps for digital products based on internal vision and customers' feedback. Prepared documents and mock-ups used as input for design analyses and feature development.
- Oversaw data integrations with external systems. Developed some of the data pipelines keeping internal databases updated myself.
- Assisted the operations team on inputting data into internal systems, on establishing workflows to that aim, and performed ad hoc data corrections or adjustments when needed.
- Documented product knowledge to ensure shared understanding among stakeholders.
- Enabled communication between units to deploy needed cloud resources and ensure they were compliant with company's policies.

Vessel Performance Management (2022 - 2023):

- Developed models for monitoring of vessel energy performance and environmental compliance, such as CII, EU ETS, and engine utilisation.
- Interacted with customer's representative to understand their needs regarding performance monitoring, then wrote and rolled out custom scripts to address these needs.
- Oversaw and further developed integration of related systems (data pipelines, APIs, web scraping).
- Specified and tested web-based user interfaces.

08/2023 – CURRENT Ålesund, Norway

ADJUNCT ASSOCIATE PROFESSOR DEPT. OF OCEAN OPERATIONS AND CIVIL ENGINEERING, NORWEGIAN UNIVERSITY OF SCIENCE AND TECHNOLOGY

(20% position)

- Collaborating with the Smart European Shipbuilding project (SEUS, EU grant number 101096224). SEUS aims to streamline vessel data usage through life cycle stages, especially design and construction.
- Assisted preparation of research papers and progress reports by scoping and refining topics, contributing to writing, and providing feedback.
- Prepared grant proposals to raise funds for new research and teaching projects.
- Acted as evaluator to MSc dissertations and as peer-reviewer to journal articles and conference papers.
- Co-supervising one PhD candidate.

08/2018 – 11/2021 Ålesund, Norway

PHD CANDIDATE DEPT. OF OCEAN OPERATIONS AND CIVIL ENGINEERING, NORWEGIAN UNIVERSITY OF SCIENCE AND TECHNOLOGY

- Collaborated on development of a web-based 3D vessel visualiser using the glTF format and of a navigation simulator leveraging GIS and AIS data to display terrain and traffic, respectively.
- Led development of a web-based digital twin wave basin during a 2.5 months stay at the Numerical Offshore Tank (TPN), University of São Paulo.
- In addition to standard tasks such as writing academic papers, writing the thesis, and giving presentations about research progress, I co-supervised three master students.

08/2017 – 01/2018 Ålesund, Norway

RESEARCH ASSISTANT SHIP DESIGN AND OPERATION LAB, NORWEGIAN UNIVERSITY OF SCIENCE AND TECHNOLOGY

(~7.5 hours/week)

- Documented Vessel.js, a web-based open source library for early stage ship design.

- Developed apps for hydrostatic and stability calculations with Vessel.js.

08/2015 – 02/2016 Ipojuca, Brazil

ENGINEERING INTERN VARD PROMAR

(30 hours/week)

08/2014 – 06/2015 Ålesund, Norway

RESEARCH INTERN SHIP DESIGN AND OPERATION LAB, ÅLESUND UNIVERSITY COLLEGE

(~7.5 hours/week)

● **EDUCATION AND TRAINING**

08/2018 – 11/2022 Ålesund, Norway

DOCTOR OF PHILOSOPHY IN OCEAN OPERATIONS Norwegian University of Science and Technology

Thesis A Standards-Based Approach to Modelling of Digital Twin Ship Data — Assessment of current standards and methods for future standardisation

08/2017 – 06/2018 Ålesund, Norway

MASTER OF SCIENCE IN SHIP DESIGN Norwegian University of Science and Technology

Stayed 2.5 months at the Marine Research Group, University College London, developing a few web apps for resistance simulation and optimisation during early stage ship design.

Thesis An Open Source Taxonomy for Simulation of Marine Operations

07/2010 – 10/2016 Recife, Brazil

ENGINEER DIPLOMA IN MARINE ENGINEERING / NAVAL ARCHITECTURE Federal University of Pernambuco

This is typically a 5 year engineering degree. I extended it in one year to join an exchange corresponding to the first half of the MSc Ship Design program at former Ålesund University College, now NTNU in Ålesund, from 2014 to 2015.

Thesis Compatibilisation of Software for Optimising Moonpool Shape with Respect to Operational Performance

INDEPENDENT COURSEWORK

- Microsoft, Azure Fundamentals, 2023: <https://learn.microsoft.com/api/credentials/share/en-us/caroFonseca-1510/72059E1C0D2D4219?sharingId=4E4AB9806E2DB81F>
- edX / CaltechX, Learning From Data (Introductory Machine Learning), 2017: <https://courses.edx.org/certificates/a67905364aa646ed80fa97a101ce6e9b>

● **DIGITAL SKILLS**

Python | SQL | Git | ISO 19848 | ISO 19030

● **PUBLICATIONS**

[ORCID ID: 0000-0003-0189-2576](https://orcid.org/0000-0003-0189-2576)

● **HONOURS AND AWARDS**

05/2024

The Wakeham Prize – Royal Institution of Naval Architects

Prize awarded yearly to best general paper in the International Journal of Maritime Engineering by an author aged 35 or under.

Link <https://ntnuopen.ntnu.no/ntnu-xmlui/handle/11250/3120531>

08/2014

Science without Borders - Scholarship – CAPES (Brazilian Agency) and Equinor

Scholarship to cover stay of one academic year at former Ålesund University College, now NTNU in Ålesund.

12/2011

Human Resources Program for Shipbuilding PRH-PB04 - Scholarship – Petrobras

Scholarship for research initiation during undergraduate studies.

● LANGUAGE SKILLS

Mother tongue(s): **PORTUGUESE**

Other language(s):

	UNDERSTANDING		SPEAKING		WRITING
	Listening	Reading	Spoken production	Spoken interaction	
ENGLISH	C1	C1	C1	C1	C1
NORWEGIAN	B1	B1	B1	B1	B1

Levels: A1 and A2: Basic user; B1 and B2: Independent user; C1 and C2: Proficient user

● NETWORKS AND MEMBERSHIPS

09/2020 – CURRENT Royal Institution of Naval Architects

Associate Member

12/2018 – CURRENT Teknisk-naturvitenskapelig forening

Member
