Analysis of Container Ship Trajectories Using AIS Data (2018-2023) for Automatic Typology Based on Operated Routes.

Laboratory, institution

AME-SPLOTT, Université Gustave Eiffel

Project within the laboratory

The ambiguous impact of containerization on developing economies: Connectivity Gains and Vulnerabilities in a Globalized Shipping Network

International partner if continuation is considered for an internship abroad
Potential collaboration with researchers from the University of North Carolina, USA (Jean-Claude Thill) and the University of La Coruna, Spain (Carlos Pais-Montes).

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Targeted field(s)

Data Science and Artificial Intelligence, Computer Science

General description of the project

This research explores the ambiguous impact of containerization on the connectivity of developing economies, with a particular focus on the former colonies of Africa and Oceania. While containerization has enhanced integration into global trade networks and lessened the historical dependence on former colonial powers, it has also introduced new vulnerabilities. The analysis raises important questions about the resilience and sustainability of developing economies' integration into the global shipping network in times of crisis.

This specfic project aims to analyze the trajectories of container ships over a 5-year period (2018-2023) using AIS data. The goal is to develop an automatic typology of ships based on the routes they regularly operate. Using these typologies, it will be possible to study capacity transfers between different geographical regions and to better understand the dynamics of ship redistribution at a global scale.

Project objectives

The main objective of this project is to develop an algorithm capable of classifying container ships based on the routes they use, using AIS data collected between 2018 and 2023. This classification will enable the creation of a typology of ships according to their role in global maritime networks (long-distance, feedering, etc.). In the second phase, a matrix will be developed to study capacity transfers between regions and to observe how carrier strategies affect regional markets. The project will also aim to identify potential changes related to the COVID-19 crisis and its impact on ship redistribution.

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