

Interdisciplinary Project (IDP) – Smart Route Optimization for Wind-Powered Shipping

Did you know that one single container ship emits more CO₂ than 65,000 cars?

At CargoKite, we are revolutionizing maritime logistics by developing the sailing ship of the 21st century. Our autonomous, micro-container ships are powered solely by wind, consisting of two key innovations: a kite-based propulsion system and a unique, patent-pending vessel design.

To ensure efficient vessel operations, we have built a route planning tool that calculates the optimal global trajectory for our ship while incorporating wind forecasts and ship dynamics. We are now looking for a team of motivated students to further develop this tool with advanced algorithms and economic modelling.



Your Tasks

- Build the foundations for our customer's fleet optimisation
 - Develop the core algorithmic architecture for routing and fleet coordination of multiple CargoKite vessels
 - Utilise real time and historical data modelling of weather, port congestion, port charges and container demand to develop a tool for optimising a customer's revenue from CargoKite's vessels
- Techno-economic analysis
 - Optimize port-to-port wind-based routing for the most competitive service
 - Rank the best port connections in Europe and develop a custom roundtrip model

Your Profile

- Individuals or teams of 2–3 master's students (M.Sc. Informatics, TUM)

- Strong Python skills, ideally also JavaScript
 - Strong background in algorithm design, optimization, or machine learning
 - Passion for sustainable technology and independent, solution-driven work
 - Experience with version control (e.g. GitHub)
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What We Offer

- High-impact work on cutting-edge green shipping technology
- Full ownership of your project with room for creativity
- Potential career opportunities – internships, working student positions, or full-time roles
- Office space, coffee, and snacks to keep you fuelled 🚀

Start: May 2024 | Duration: One Semester



Interested? Reach out to us: **alex.moore@cargokite.com**



Learn more: **www.cargokite.com**