# Title Abstract: Artificial intelligence to predict long term collision risk

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Jordi Daniëls has a Bachelor of Science and Master of Science in Business IT and Post-Master degrees with honours in AI research. He is active in the area of artificial intelligence and machine learning from the start of his career and he is always looking for new and exciting opportunities. At Saab Jordi Daniëls is an Analytics Translator for Data Science and Artificial Intelligence, aiming to contribute to a more sustainable future by improving the safety, efficiency, and environmental responsibility of the Maritime sector.

## Abstract:

Maritime traffic is getting ever busier and consequently the risk of collisions is constantly rising. Vessel Traffic Service Operators play an essential role in increasing efficiency while maintaining safety. To ensure maximum safety, the operator should be assisted in times of increased traffic density. It is not a matter of whether collisions occur, but when and with what impact. Research is done to predict collision risk at a larger time horizon by using Machine Learning algorithms, part of a larger Artificial Intelligence theme. Advanced ETA calculations are performed by creating routes based on historical data and plotting vessels on these routes using the Known Nearest-Neighbour-algorithm. Using the speed and course of a vessel, the predictive model is able to know where vessels will be and at what time. Collisions can be detected pre-emptively by combining the individual predictions for multiple vessels and cross-checking the data of these vessels.

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