Challenge Name: Automatic Voyage Prediction

Description

The tanker market is very opportunistic by nature, and ships operate on single-journey basis much like taxis. For an arbitrary tanker, there is *a priori* no reliable way to know which port it is likely to call next. In fact, it is often the case that a ship's captain is initially assigned a general region as the destination, but not the exact port. Reliably predicting the destinations of individual ships, and thus also the macro flows of ships at a given point in time, is useful for assessing where shipping capacity is building up and where Maersk Tankers should position its fleet accordingly.

The challenge as described here serves as inspiration, and it is not the desire to curb creative alternative solutions.

Desired benefits

The desired benefits of the challenge are twofold: Knowing the likely distribution of the tanker supply picture some weeks in the future allows Maersk Tankers to be more competitive on pricing. Furthermore, we can potentially lease potential competitor vessels that are likely to be near cargos in ports where there will be no Maersk Tankers ships in the near future (so-called *relets*).

Solution details

One approach could be to treat this challenge as a classification problem: a ship's position and recent history yield a list of potential destinations (sorted by their probability). Another, simpler approach could be to consider the most visited ports by ships of the same type. In all cases, some measure of accuracy on a proper validation set is, of course, expected. The destination does not necessarily have to be the exact port name—a geographical region would also be of interest—but of course the smaller the region the better.

It is a definite plus if the solution can give probabilities to destinations after the current voyage as well.

Solution criteria

- Scalable

- Includes performance metric

- The solution should be applicable to an arbitrary oil tanker

Suggested data sets

See the document describing the data sets for more detail

- AIS data - this often contains vessel destination data that is entered by the ship's captain

- Tanker rates

- Port list

- Ship list

- Maersk Tankers ship voyages

Clues to get started

- Scope which segments (Handy, MR, LR2, etc.) to approach first

- Identify the major hubs

- Draft destination regions