ICE SPY

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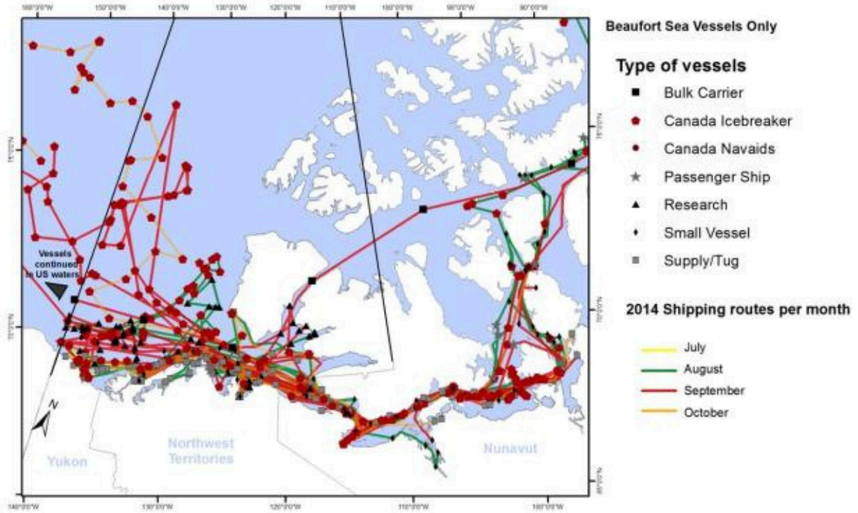
The Problems



[2]

The changing climate constantly opens and closes trade routes.

The Northwest Passage is one of the most hazardous shipping routes globally. [1]

The extreme isolation of northern destinations means remote communities and industrial sites like mines rely on short windows for resupplying.

Our Solution

Satellite Data

We used open data provided by the NSIDC [3], due to limited access and wait times with EODMS.

Ice Prediction

We used machine learning algorithms to predict future ice patterns based on the data.

Advanced Pathfinding

We implemented A* pathfinding on a pixel map to find the most optimal route to be displayed to the user, along with an ice map.

Key Features

Bilingual Support

Ice Spy is supported in both of Canada’s official languages.

SMS Messaging

We can text critical updates to remote areas or deadzones without internet access.

Showcase

Future Advancements

Hexagonal Based Mapping

Implement a hexagon based mapping system for increased accuracy.

Icebreaker Routing

Determine the best locations for icebreaker deployment.

More Model Training

Adding additional parameters such as ice thickness for more accuracy.

REFERENCES

[1] https://arcticportal.org/shipping-portlet/shipping-routes/northwest-passage
[2] https://www.gov.nt.ca/ecc/fr/services/nwt-state-environment-report/5-pressures-human-activity
[3] https://noaadata.apps.nsidc.org/NOAA/G02135/north/daily/geotiff

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THANK YOU!

QUESTIONS?