AI-Driven Drone System for Detecting and Managing Oil Spills

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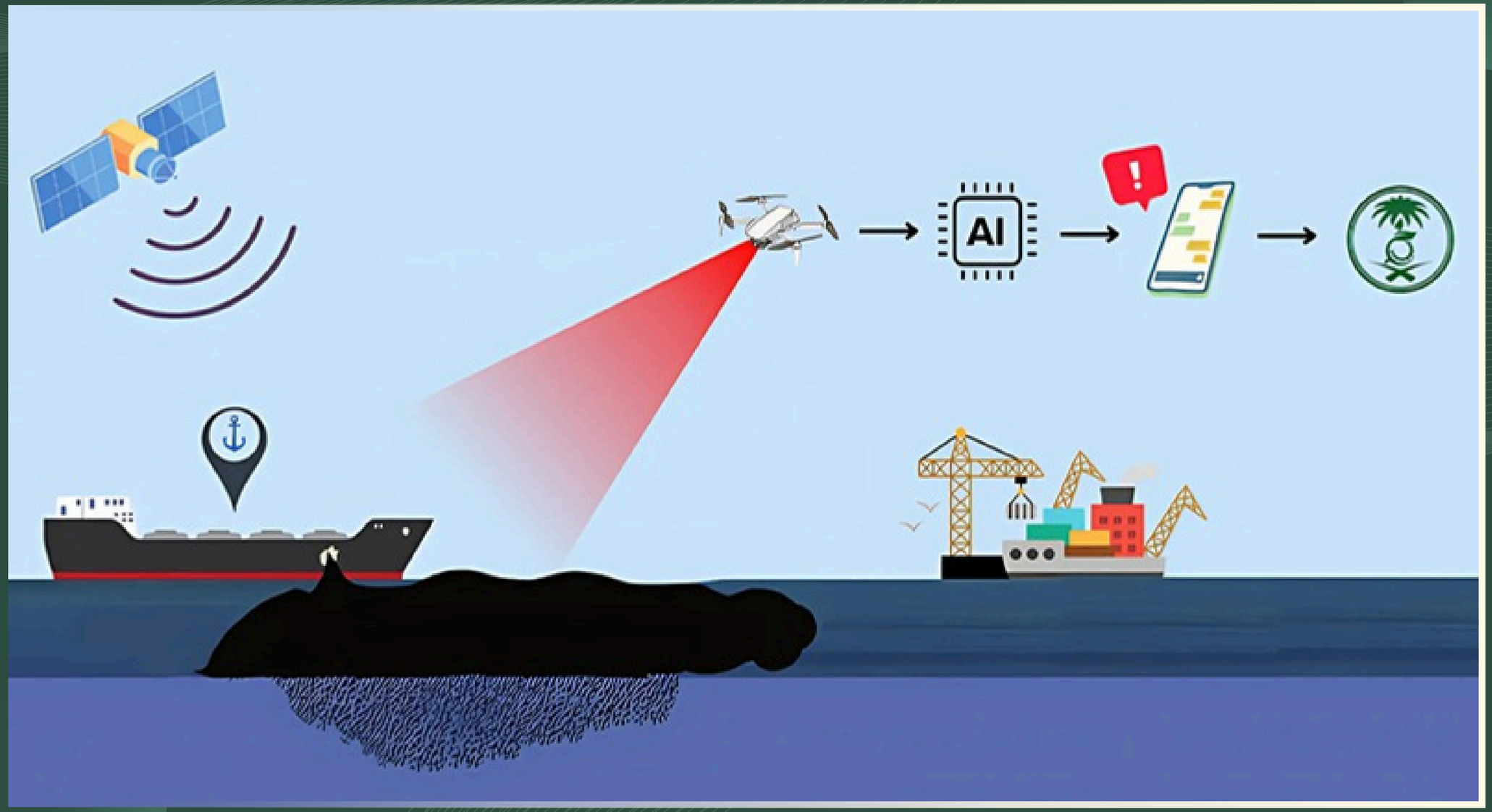
Oil Spills and Their

Effects on Oceans

The western coast of Saudi Arabia, bordering the Red Sea, is central to our national identity. For coastal residents, the sea shaped our lives through swimming, fishing, and seafood traditions. However, oil spills threaten this connection, damaging the sea's beauty and causing health risks, including poisoning and kidney failure from contaminated fish. Addressing this issue is crucial to protecting the Red Sea's ecosystem, our heritage, and local livelihoods.

Problem Solution



Aim

The aim of this project is to develop an advanced system for detecting oil spills and identifying the responsible ships, thereby reducing environmental damage and supporting sustainable marine management.

TARGET USERS

01.

NCEC- National Center for Environmental Compliance Oversight

02.

General Authority of Meteorology and Environmental Protection

03.

Ministry of Environment, Water and Agriculture

Motivation

Contribute to Saudi Arabia's Vision 2030 by developing a sustainable solution for managing oil spills in the marine environment.

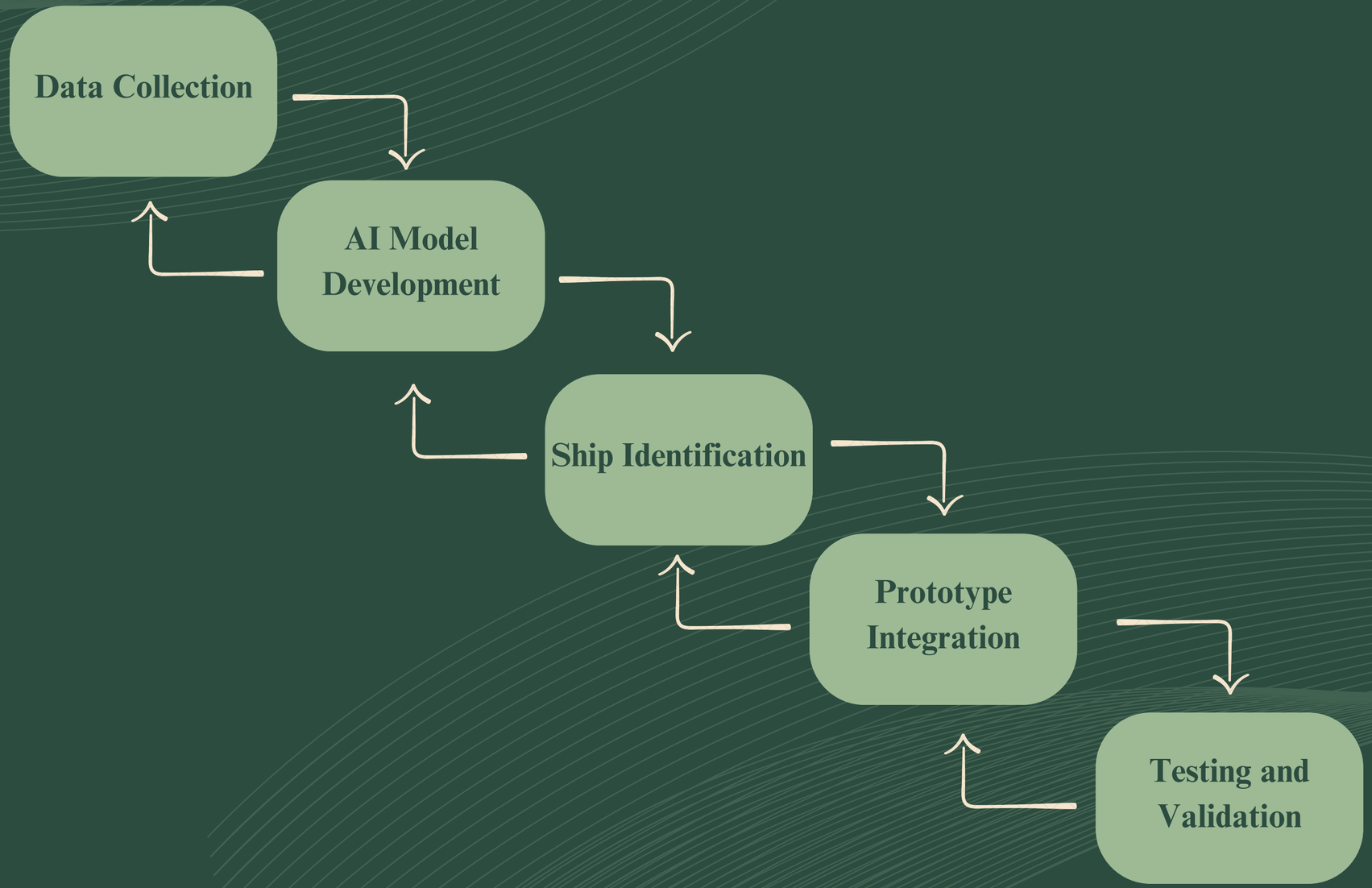
Knowledge Area

01. Artificial Intelligence

02. Deep Learning

03. Software Engineering

Method for Building a Prototype



Our Preparing

Dataset

We are using a public dataset comprising 2,001 images suitable for segmentation tasks.

Interview

We conducted an interview with a Marine Geologist -captin- to gain deeper insights into the problem we are addressing.

Expanding Technology

For future work we plan to expand this technology to detect other phenomenas such as: marine pollution like plastic waste, detect Illegal Activities like unauthorized ship movements and illegal fishing detection.

Thanks

Any Questions?