

Charybdis: Protecting Marine Ecosystems with Innovation

Charybdis is an autonomous robot designed to clean ports of oil spills and plastics, leveraging AI and Organic Filters to preserve marine biodiversity.



Inspired by the mythical monster, Charybdis uses vortex technology and organic filters to revolutionize port cleanup.

Problem Statement

- · Rising pollution in marine ecosystems
- · Persistent oil spills damaging biodiversity
- · Inefficient cleanup methods for plastics and toxins
- · Limited tools for mapping underwater environments
- · Use of none environmental filters





Research

Analyzed pollution issues and existing cleanup methods

02 Ideation

Developed concepts for Al-driven marine cleaning tools



03 Concept Development

Created designs integrating vortex tech and organic filters

04 Prototyping

Research and engineering for prototype





05 Testing

We tested multiple solutions for effectiveness and fit



Results & Outcomes

- Designed and developed the UI/UX interface
- · Developed 5 concepts, with 2 CAD designs finalized
- · Integrated AI, and sensors for precise waste collection
- · Leverage biodegradable filters from RESTIA
- · Designed Charybdis robot for autonomous cleanup

A Glimpse into Our Visuals



Account Creation



Device Management



Control Screen



Main Dashboard Interface



Route Planning Screen



Maintenance Screen

