



# Whale Shark Conservation

One Ocean

# Team Member



ChingNam HANG

**BSc CS, CityU**



Iris LIU

**BSc CS, CityU**  
**Advanced OW diver**



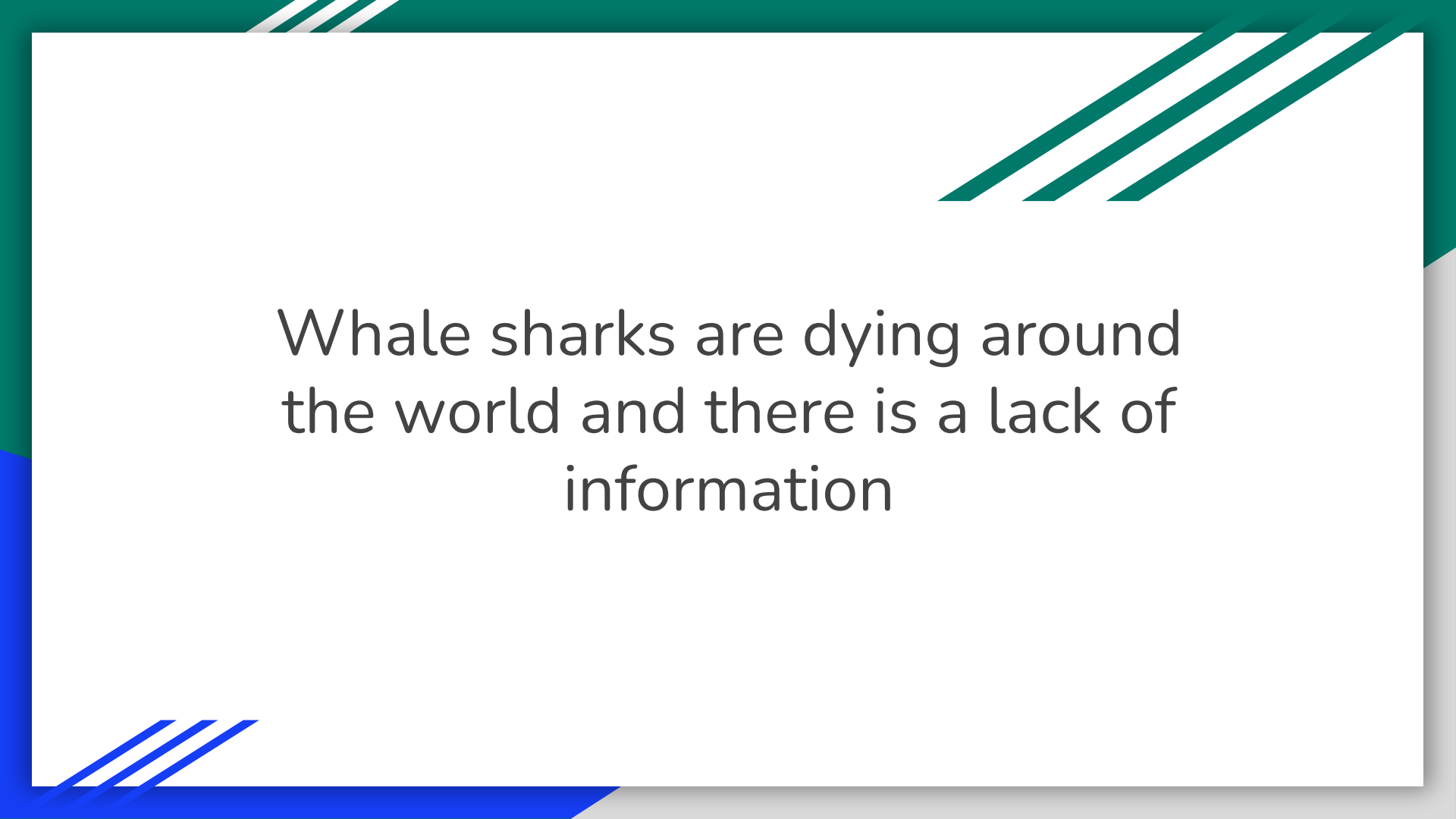
ManFai WONG

**BSc CS, CityU**

# We care about the ocean

Sometimes we dive, we “plog”...






Whale sharks are dying around  
the world and there is a lack of  
information


# IUCN Red List of threatened species

whale sharks are at serious risk of **extinction**

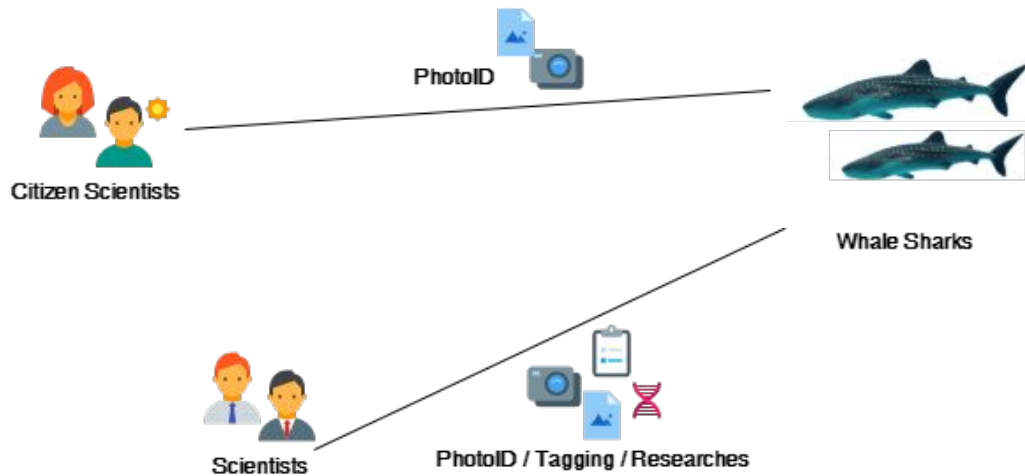




Combines **Deep Learning** and **Computer Vision** technologies to understand the **global declines of whale sharks**

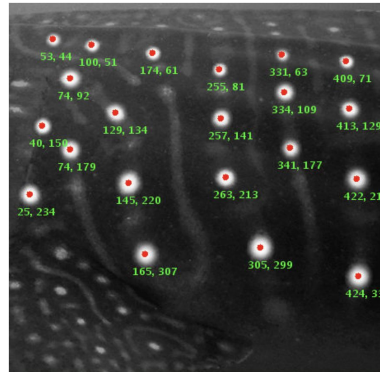
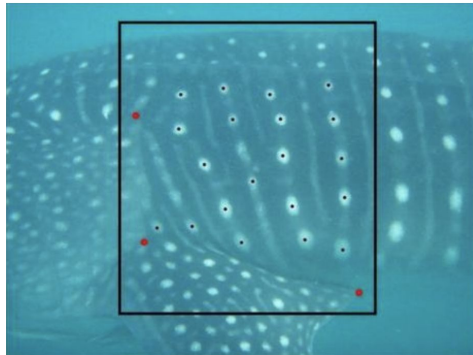


## One Ocean Ecosystem



# Photo-ID Technique

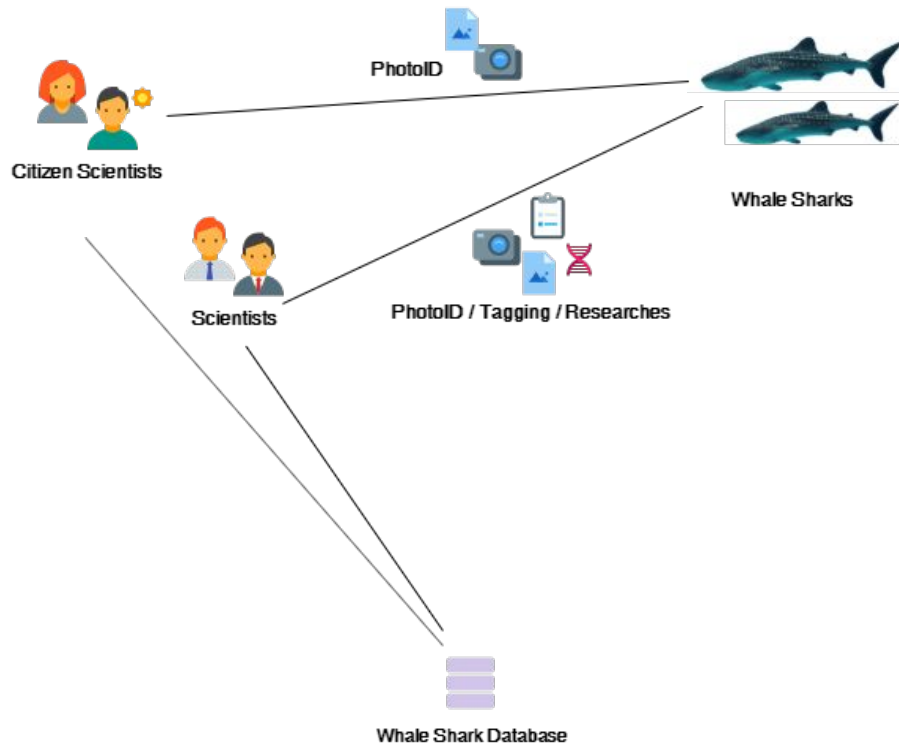
- **Image analysis** on the whale sharks' characteristics of using computer vision technologies
- **Instant identification** of different whale shark species

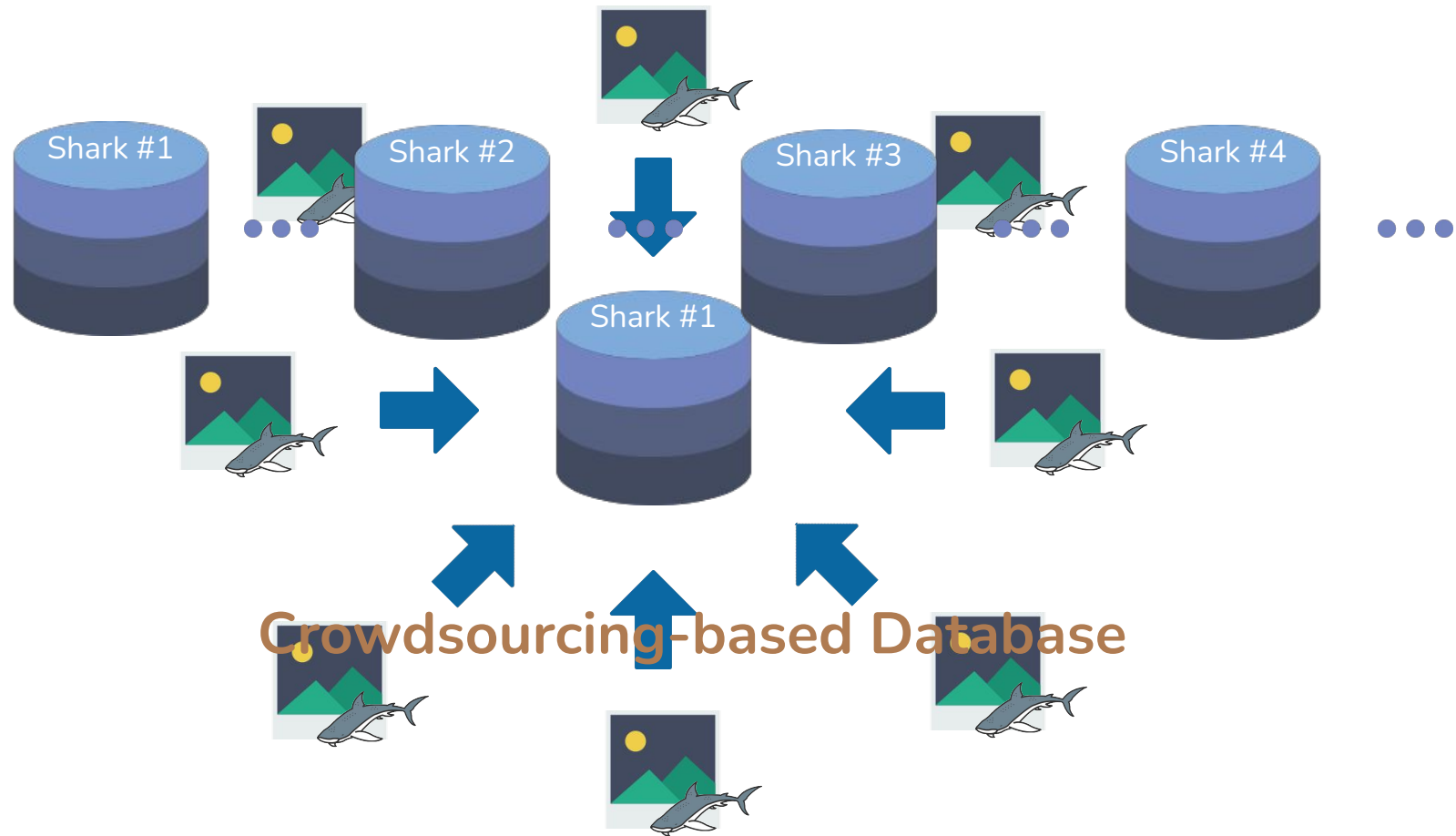


ID: 61261 / Willy  
the whale shark

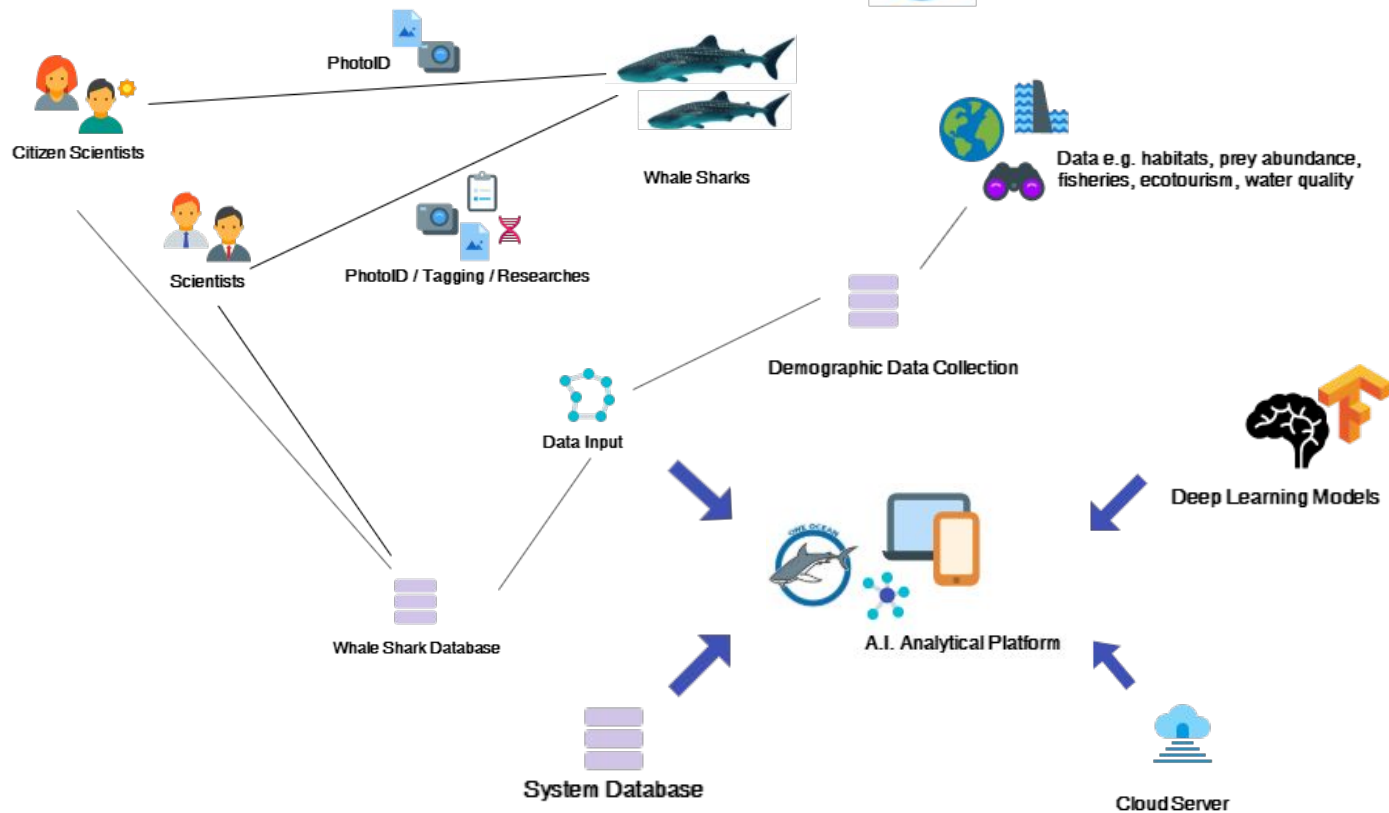


# One Ocean Ecosystem





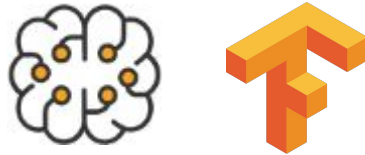
# One Ocean Ecosystem



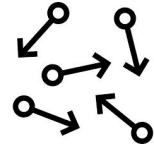
# Data Analytics



**Mobile GPS  
Location Tracking**



**TensorFlow  
+  
Deep Neural Network**



**Movement  
Pattern**



**Frequently  
Appearing Area**

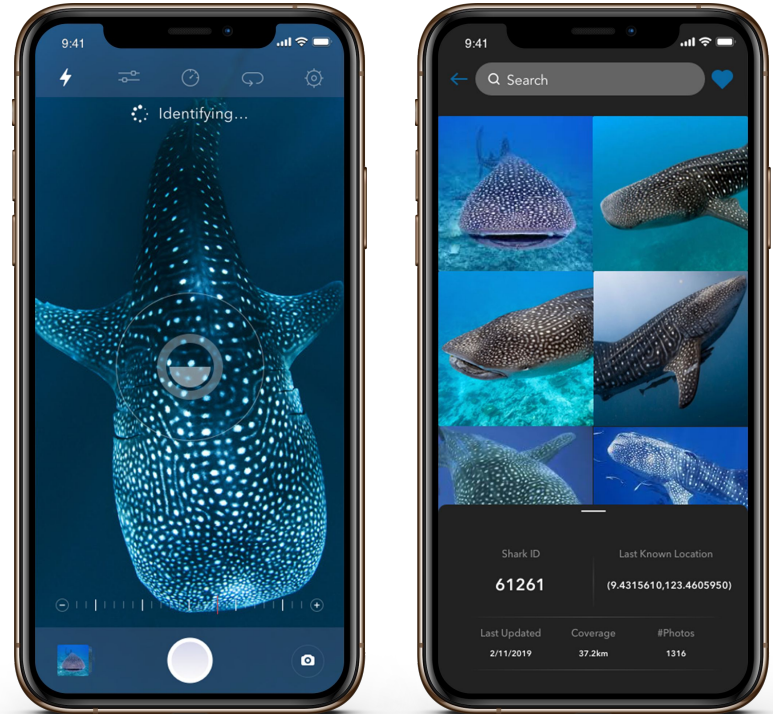
**Data Collection**

**Data Analysis**

**Applications**

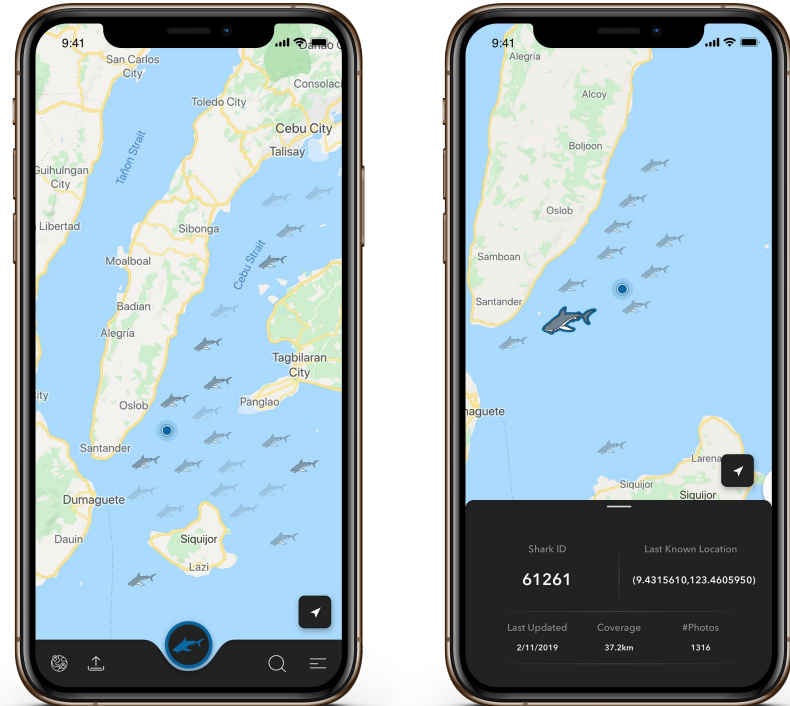
# Integrated Mobile Solution

- Photos / Videos upload with mobile devices
- Automated image analysis
- Instant database matching
- Capture of whale shark data
  - Geolocation
  - Time of encountering
  - Health status
  - Size
  - Coverage of sea



# Interactive Live Map

- Real time whale shark tracking
- Historical encounters
- Predictive track analysis



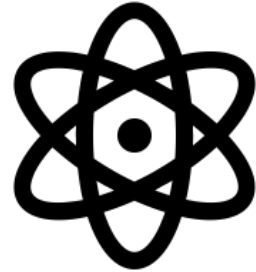
# Who can engage?



**Public**



**Divers/Public Scientists**



**Scientists**



**Government**



**WWF**



**NGOs**

# Increase Public Awareness





# Make Targeted Conservation Measures





# Thank You

To those who cares about our ocean, search on!

# One Ocean Ecosystem

- Integrated A.I. mobile application
- Data analysis of whale shark and global demographic data
- Real time tracking & predictive track analysis
- Consolidated study of whale shark population and migration pattern

