



# Fish Farming

**Augmented Capabilities with AI**

Augmented Capabilities with AI

# Fish Farming

# Stakeholder K

What's the  
**problem**

Key Performance  
**Indicator**

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The  
Stakeholder

Data  
Acquisition

Outdated IoTs

Feed Costs [KPI]

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What's the  
problem?

Water Quality

Feed Quality

Fish Growth

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**IoT**s & Data

Water

Temperature

pH **H<sub>2</sub>S** Salinity

Bacteria **Biomass**

Growth **Monitoring**

**Spinal** and Cardiovascular  
Development

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# Augmented Capabilities I

Feeding  
Efficiency

Biomass  
Estimation

Growth Tracking

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# Augmented Capabilities II

# Early Detection of Diseases

# Environmental Monitoring

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Water Quality

IoT<sub>s</sub> and Autonomous Robots

Heuristics Models &  
Pattern Finding

Temporal Information



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Feed Quality

**Biomass Prediction**  
(IoT Data Water Quality Analysis Time Domain)

Average **Daily Growth**  
(ADG) **Feed Conversion**  
Ratio (FCR) **Probiotic** Regime

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**Fish** Growth  
Health and Welfare

**Fish Behaviour** (Image and  
IoT Data Analysis)

Fish **Size**,  
**Shape**, and **Position**

**Abnormal Appearance**

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# Key Core Techs

Image Analysis (CNNs)

Sequential Data  
(LSTMs) Temporal Information

Pattern Finding (DNNs)

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Key  
Core IoTs

Cameras + Lidar &  
Acoustics

IoT Sensors

Swarm Robotics

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Digital

Twins

Monitoring

Optimisation  
and Simulation

Game On!

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What's  
Next?

Evaluate the quality  
of the **Data**

Evaluate the quality  
of the **IoT**s

Find the **Cost**  
**functions** that  
solves the problems

Go For it!