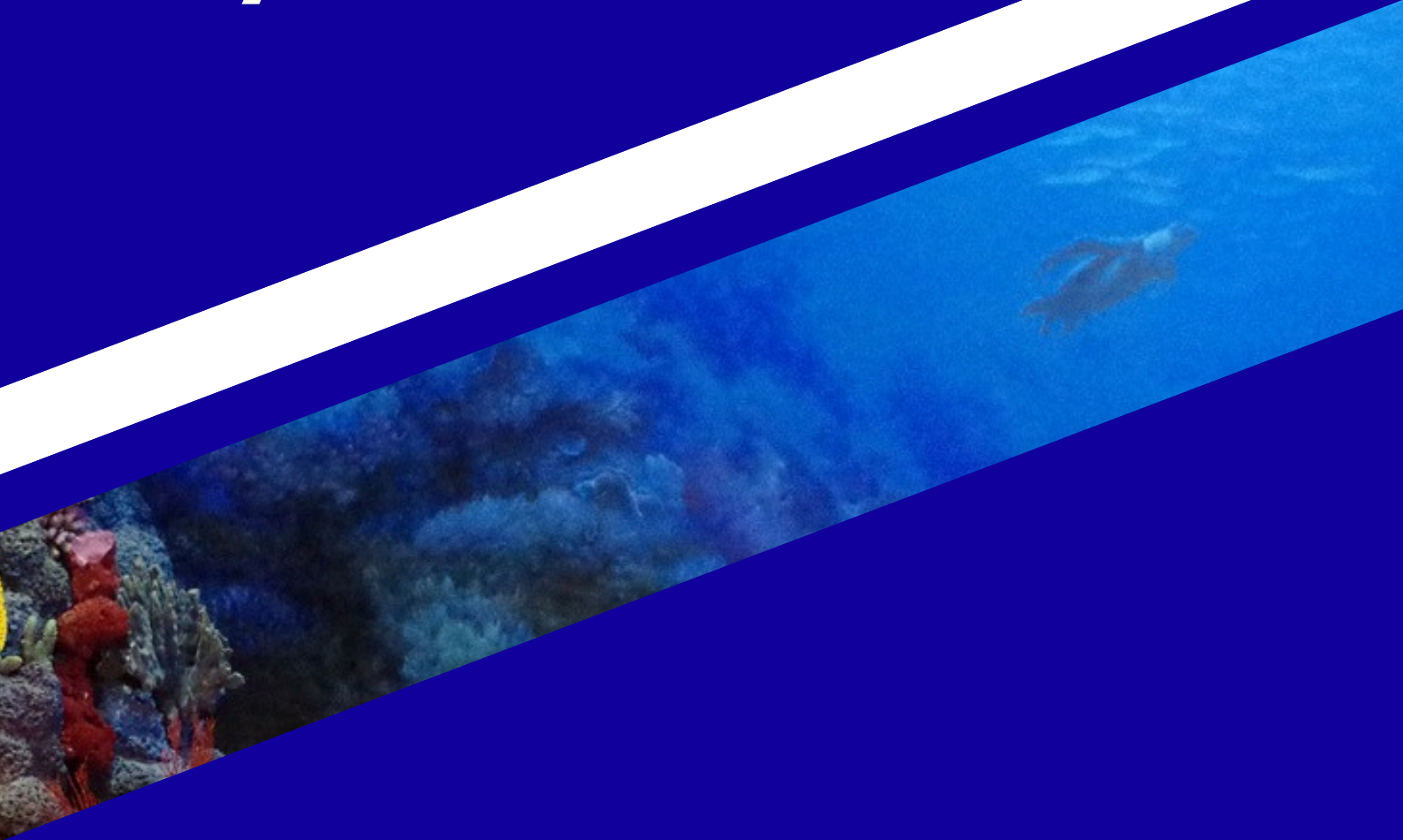




# Team Bath Hydrobotics



**2025 Team Bath Hydrobotics –  
Company & ROV Specifications**



UNIVERSITY OF  
**BATH**

# COMPANY SPECS

## **Company Name:**

Team Bath Hydrobotics

## **School / Organisation:**

University of Bath, Department of Electronic & Electrical Engineering  
Bath, Somerset, United Kingdom

## **Country:**

United Kingdom

## **Distance Travelled to World Championship:**

Approximately 6,100 km (from Bath, UK to Alpena, Michigan, USA)

## **History of MATE ROV Participation:**

This is the first year of participation for Team Bath Hydrobotics at the MATE ROV Competition. The company is a new team, formed by undergraduate students passionate about robotics, marine technology, and systems integration.

## **Team Composition (Grade/Level):**

All team members are undergraduate students in their 1<sup>st</sup>, 2<sup>nd</sup> or 3<sup>rd</sup> year of BEng or MEng programmes in Robotics, Computer Science, Mechanical, or Electrical Engineering. Only 3 members are studying Finance/Economics.



**Figure 1:** Team Photo from first social event.

**Front Row:** Joel Biju (Control System Member), Balazs Toth (CFO), Abdullah Ali (CEO & CTO), Ibrahim Ismail (Structural Design – Float Team).

**Second Row:** Aaron Sandhu (Control System Member), Silvio Xu (Software Leader), Jake Briscoe (Actuation Team Member), Jiahao Zheng (Actuation Team Member), Aryan Ghosh (Control System Member), Sally Gomez (Actuation Team Leader), Abdullah Hussain (Structural Design Leader), Khushi Solanki (Structural Design – ROV Team).

**Third Row:** Alex Dent (Software Member), Neev Bakshi (Software Member), Umar Kamran (Software Member), Omar Hassaballa (Control System Member), Ahmed Al Yasin (Structural Design – Float Co-lead), Ashfaaq Shabeer (Structural Design – Float Co-lead), Jeet Sirikulthada (Structural Design – Float Team), Utkarsh Bhamidimarri (Structural Design – ROV Team), Mayousan Thavathesan (Structural Design – ROV Team), Mann Patel (Structural Design– ROV Team)

# ROV SPECS

**ROV Name:** TBD

**Total Cost:**

Approximately \$ 5,636.16 USD

(Approximated price of the overall ROV).

**Size and Weight:**

Dimensions: 49.6 cm (L) x 60.7 cm (W) x 26.2 cm (H)

**Weight in air: 25kg**

Neutral buoyancy is achieved in water

**Total Student-Hours:**

The design, testing, and construction of the ROV and profiling float took approximately 500 student-hours, contributed by 40 core team members.

Tasks included CAD modelling, electrical wiring, software development, mechanical assembly and machining, and testing.

**Safety Features:**

- Pressure-tested aluminium and acrylic enclosures with dual O-ring seals
- Leak detection sensors (internal)
- Fused power systems (30A inline)
- Tether strain relief and ground bonding
- Emergency cut-off protocols and test checklists
- All lab work performed under JSEA-compliant procedures

**Special Features:**

- Custom GUI for real-time telemetry and video control
- IMU-based panorama stitching system for photosphere mapping
- Simulink-based 6DOF control architecture transitioned to Arduino firmware
- Profiling float with a 750N actuator and 500ml syringe-based variable buoyancy
- Dedicated surface station using Xbox controller and UDP-based communication



**Figure 2:** Photo of ROV excluding buoyancy tubes & dynamic actuation tools.