# AGH MARINES

## The AGH University of Krakow
## Cracow, POLAND

**Distance traveled to the competition: 4,836 miles / 7 783 km flying**

**History of MATE: New participants in MATE Competition**

**Total cost: 14493,66 $**

**Size: 66.2x50.9x22.8 cm**

**Weight: 16 kg**

**Total student-hours to design and build: 300 h**

# NARWHAL ROV Spec

### Safety features:

The acrylic tube from Blue Robotics features aluminum flanges and one solid aluminum end cap, with a custom-made acrylic end cap. The acrylic end cap includes ten nickel-plated brass cable glands which are IP68 certified up to 10 bar.

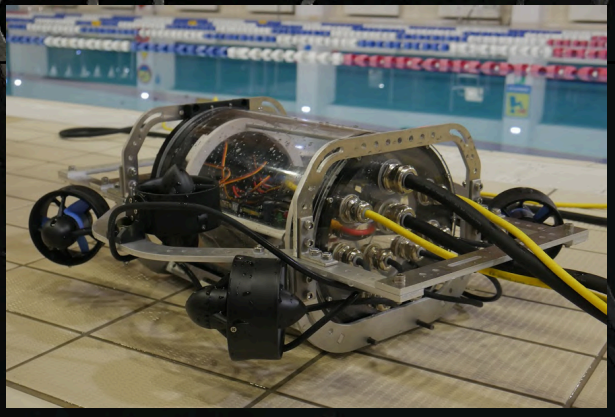
### Special features:

Artificial intelligence solutions are being developed using the Oak D Pro POE stereoscopic camera, which offers deep vision, an integrated IMU, and a built-in processor for custom AI models. This enhances ROV'S functionalities and paves the way for future autonomous mode implementation. The AI team develops neural networks based on the YOLO framework for underwater object recognition with the stereoscopic camera providing accurate spatial localization of detected objects.

The robot is equipped with sensors to monitor its functioning and remotely manage the power system in case of anomalies. It is possible to start and stop individual voltage levels by communicating with the microcontroller. In addition, an emergency stop is located in the power station on the surface to completely shut down the power supply to the robot, as well as measuring equipment to monitor basic parameters.

Symmetrical aluminum frame (PA11), consisting of two primary base elements, two upper, and two lower ribs which are secured with aluminum counters, bolts, washers, and self-locking nuts

### Photo of the vehicle:



### Company photo:

From the Left: dr inż. Jędrzej Blaut, inż. Michaela Murzyniec, Franek Korpan, Mikołaj Pasterz, Dawid Bachnacki, Daniel Głąbicki, inż. Szymon Wojciula, Wojciech Jankowski, Piotr Mistarz, Adam Kasielski, Michał Furgała, Bartosz Pobudejski, inż. Malwina Cieśla, Patryk Podgórski, Martyna Mulawa, Piotr Flak, Dominik Wojtasik, Paulina Wieczorek, inż. Piotr Wilkoń, Mateusz Maź, Karolina Zając, Patryk Konieczny, Agnieszka Blicharska, dr inż. Ryszard Olszewski