







School Name	Nanyang Technological University (NTU)
Company Name	Mecatron
Region	Singapore
Distance Travelled to Competition	15756.32 km (NTU ABN → Kingsport Aquatic Center)
History of MATE Participation	1st year participating in MATE competition
Range of Grades	Year 1 - 3 undergraduates






Quick Specs

Length	0.69 m
Width	0.42 m
Height	0.49 m
Weight	13 kg
Total Cost	US\$5000
Time Spent	10Mths

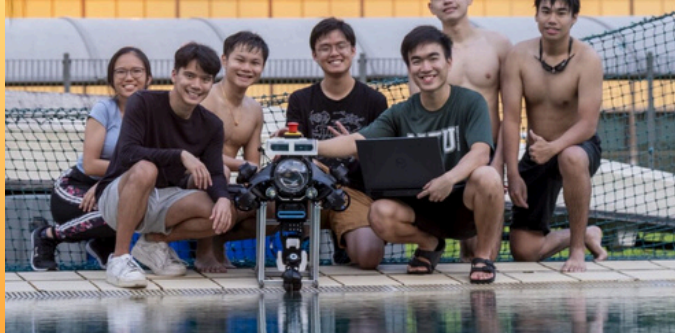
SAFETY FEATURES

- 
ROV CENTRAL POWER SWITCH
 Rotary switch for immediate power on and power off of entire ROV system
- 
TOPSIDE E-STOP BUTTON
 Brightly-colored and easily accessible to instantly kill thrusters and actuators
- 
HARDWARE FUNCTIONAL SAFETY
 Fitted thruster guards, no sharp edges and tether strain relief (topside & ROV)
- 
INTERNAL MONITORING SYSTEM
 Leak sensors & voltage sensors on ROV to report any system irregularities

SPECIAL FEATURES

- 
6-DOF ROV CONTROL
 Maintain ROV attitude for steady underwater observations
- 
MODULAR & AERODYNAMIC FRAME
 3D-printed frame with multiple sensor attachment points and optimized shape for minimal drag
- 
2-DOF ROBOTIC ARM
 Easy manipulation of underwater objects
- 
AUTONOMOUS TARGET ID & HOMING
 Using computer vision with ROS for target detection, then PID control for homing
- 
STEREO VISION
 ZED 2 stereo camera on ROV for scaled 3D reconstruction of underwater objects

OUR TEAM



Vu Tien Luc (Y2)	Executive Lead
Jennifer Goh Zhen Ni (Y2)	Business Lead
Lim Han Zhou, Arthur (Y2)	Hardware Lead
Toh Jia Hao (Y3)	Software Lead
Rushdan Mikail Bin Roslan (Y1)	Mechanical Engineer, ROV pilot
Zach Low Qing Rong (Y3)	Mechanical Engineer, Safety Officer
Liu Fangzhou (Y2)	Mechanical Engineer
Maximus Yeo Zheming (Y2)	Mechanical Engineer
Cheo Le Xian (Y1)	Electrical Engineer
Abdillah Goh Jin Long (Y1)	Software Engineer, Web Developer