## NTU AAV Community & Outreach Submission

At Archimedes Autonomous Vehicles (AAV), community engagement means making robotics accessible and learning from others. Since **June 2025**, our outreach has connected school students, university peers, families, alumni and engineering practitioners through lab visits, public events and technical exchanges. Our aim is to show what students can build together and make the pathways into maritime robotics easier to understand.

At Live It Up, Bringing Engineering to Life, in **August 2025**, we spoke with hundreds of students from primary to tertiary levels across three days. Organised by NTU College of Engineering with support from Singapore's Ministry of Education, the event gave us an opportunity to explain our RobotX surface vessel and SUAS aircraft to audiences with different levels of technical knowledge. We connected vehicle design, sensing and testing to maritime operations and engineering careers, using our competition experience to make these subjects tangible.

Our lab provides another setting for these conversations. In **September 2025**, we hosted approximately 30 students from Taipei First Girls' High School, presenting in Mandarin to make the vehicles and competition goals more accessible. We welcomed Raffles Girls' School students and NTU alumni and families. These visits introduced the mechanical, electrical, software and operational work behind autonomous vehicles. A **June 2026** visit by Nanyang Business School students extended the conversation beyond engineering, covering sponsorship, communication, operations and project management as essential contributions to a robotics team.

We brought maritime robotics beyond campus through the Maritime and Port Authority of Singapore's 30th anniversary roadshows at Lot One in **May 2026** and IMM in **June**. Members introduced families, students and public visitors to autonomous vehicles and their potential roles in inspection, safety and logistics. Explaining prototypes, sensors and field testing in everyday language helped us connect student projects with the maritime systems that support Singapore.

Strengthening the community also requires learning across institutions. In **July 2026**, five members visited NYCU's ORCA AUV Underwater Robotics Lab in Hsinchu. As AAV prepared its first underwater vehicle, the teams discussed localisation, sonar, Doppler velocity logs and waterproofing, alongside sponsorship, documentation and preserving knowledge as senior members graduate. Three newer members from simulation, mechanical and electrical brought questions from their responsibilities, making the exchange relevant to the next generation of our team.

During our **June 2025** SUAS trip, visits to the U.S. Naval Academy and the University of Maryland Space Systems Laboratory exposed members to other approaches to simulation, testing and engineering education. At ROSCon 2025, two passes provided by Open Robotics enabled participation in sessions and workshops on ROS 2, simulation and deployment. These opportunities connected our members with the wider robotics community and informed development discussions.

Together, these activities connect the people who build robots with those who may study, use or support them. We contribute our experience through accessible explanations and welcome knowledge from teams and practitioners facing different challenges. For AAV, the value of RobotX extends beyond competition: it provides an engineering purpose around which students, educators, industry and the public can meet, ask questions and learn from one another.