Autonomous LPV Competition

Sponsor: Naval Surface Warfare Center (NSWC) Crane

Budget: $10,000

Description:
This challenge will directly relate to one of the naval efforts in low profile vessels (LPVs). The participating universities, will receive a blue print of the boat build, a bill of material, instruction manual, a sensor package to be used on the boat to make it fully autonomous, and a financial stipend.

A brief overview this challenge: During the course of this competition, teams will be required to have their fully autonomous LPV navigate a buoy course on the water and stay within the bounds of the buoys without colliding with any of the buoys. Teams will also be required after the successful completion of the course to navigate to a certain color and sized buoy at the end of the course to demonstrate the ability to detect and classify objects. Once the LPV navigates autonomously to the correct object at the end of the course, it will need to deploy a sensor at the buoy, demonstrate that the LPV is receiving information from the deployed sensor and the communication link between the two is working successfully (but it is not a physical tether), and finally navigate to the exit point.

Update: There has been an update on this front for risk mitigation and to help shift the focus more towards the AI portion of this competition. You are no longer going to have to build the boat yourselves. The boat will be fully constructed then delivered to you in a package along with the sensors, propulsion, steering mechanism, sensor mounting hardwire, and wiring information.

Faculty advisors: Drs. Bin Chen and Guoping Wang

ECE Students: Connor Fort, Olive Bartz + 1-2 ECE students.

Notes:

1. Students working on this project must be committed to participating in the May 10 competition.
2. The building/testing stage of this senior design project will start in the middle or end of September 2023 or at latest in the beginning of October.