HUMMINGBOT

UW Robotics - Autonomous Robot Racing Team - 2019

SPONSORSHIP

PACKAGE - 2019

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WHO WE ARE

Our Passion

Our passion is to build a state-of-the-art autonomous high speed racing vehicle that outperforms human-controlled racing cars.

Our Team

Our team consists of **25** Undergraduate and Graduate Students currently attending the University of Waterloo, as well as a network of Alumni, Professors, Advisors, and a Research Lab (**CogDrive**). Our team is a multi-award-winning team that competes annually in the International Autonomous Robot Racing Competition (IARRC) for over **10 years**.

The team is currently operating under the UWRobotics (University of Waterloo Robotics) team, sharing the same work space with the Mars Rover team. Both teams aim to provide students with an environment to apply practical engineering skills in robotics and technology.

Hummingbot

Competition & Milestone

Challenges

Every year, the team designs and builds a mini-vehicle that races in a fully autonomous mode, against other robots from all over the world. The robot has to navigate through obstacle-filled courses without any human guidance or control. Our main challenges are following:

- Navigation & Path Planning
- High Speed Local Mapping
- Active Collision Avoidance
- Sign Following
- Object Detection
- Circuit Board Design
- Signal Processing
- Sensor Fusion
- Vehicle Dynamics
- Vehicle Stability

Building an autonomous racing car is a multidisciplinary engineering project that covers mechanical, electrical, and software. The project really focuses on optimized and accurate algorithms, control software, and flawless integration.

Our Milestone

2014 July
IARRC
2nd Place

2015 July
IARRC
1st Place

2016 July
IARRC
1st Place

2017 July
IARRC
1st Place

2018 July
IARRC
4th Place

2019 July
IARRC
(Preparing...)

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ABOUT OUR ROBOT

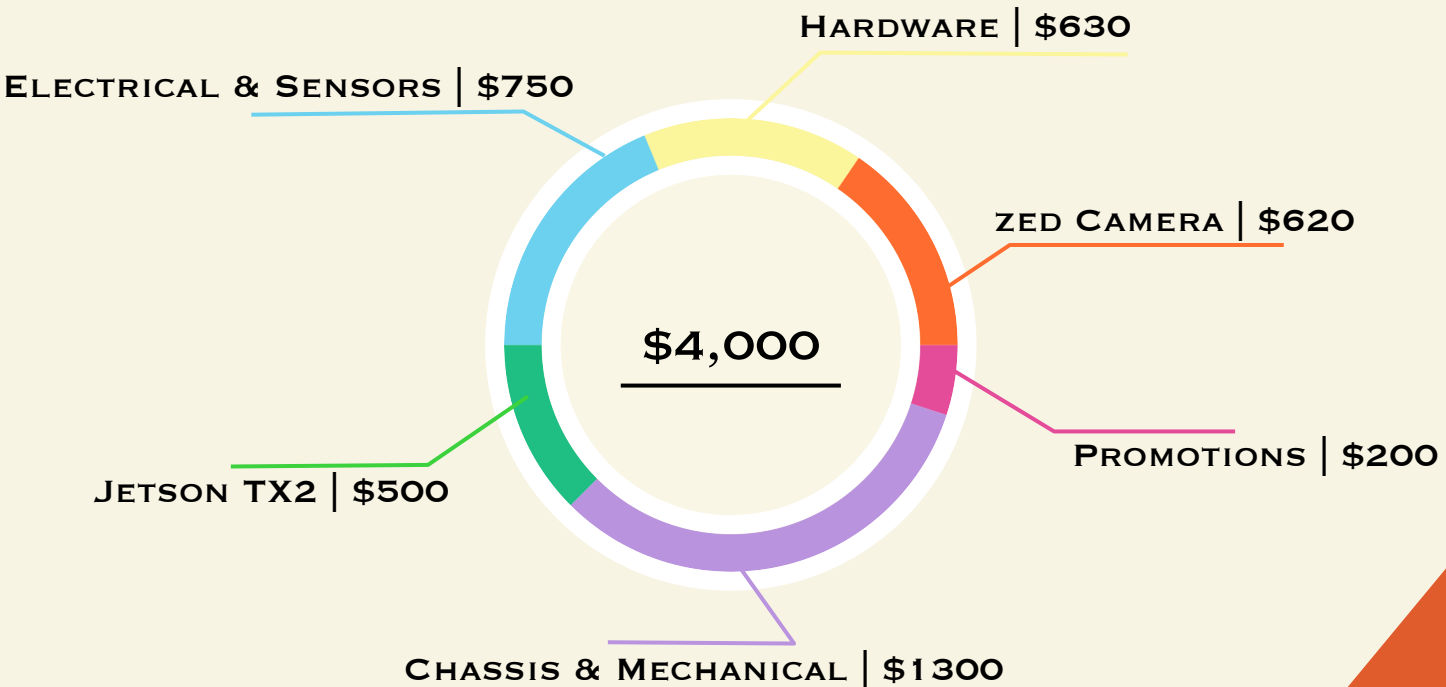
Our Past Robot

In the past few years, our robot was built on top of a 1:10 Traxxas RC chassis, and equipped with a multi-camera perception system, LIDAR, micro-controller and IMU sensor, for computing robot poses and generating local maps. The entire robot was mainly controlled by a powerful Linux computer using the Robot Operating System (ROS).

Our Goal For 2019

For 2019, we are aiming to build a more compact and powerful robot with a custom chassis, Nvidia Jetson TX2, ZED camera, LIDAR, steering angle sensor, encoders on all wheels, and a customized control board.

Budget Plan For 2019



Sponsorship

Benefits

1 GOLD – $1000+

- Large logo on the robot & website
- Recognition on T-shirts & video/paper submissions
- Be able to have first look at our reports, code base, test runs, and monthly team updates on our progress
- Resume database & host personalized info. session or interviews

2 SILVER – $500+

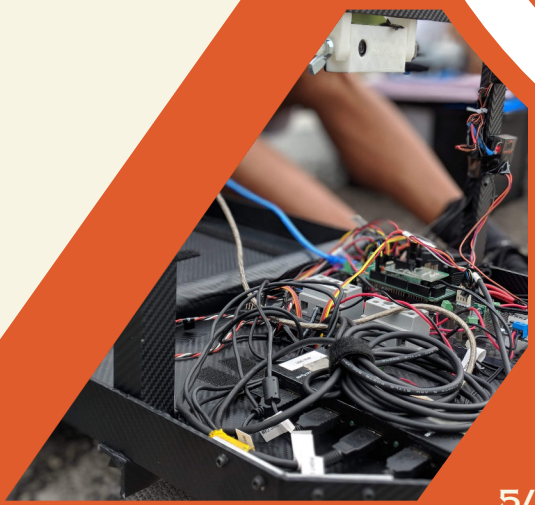
- Medium logo on the robot & website
- Recognition on T-shirts & video/paper submissions
- Resume database & host personalized info. session or interviews

3 BRONZE – $250+

- Small logo on the robot & website
- Recognition on T-shirts
- Resume database

4 Contributor – <$250

- Mini logo on the robot & website
- Recognition on T-shirts
- Resume database



*** Ask us about our CUSTOM sponsorship options.**

Thank you to our sponsors!

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