Yuxuan Chen

Research interest

My personal research interest has been determined in the direction of aerospace engineering. The potential of Unmanned Aerial Vehicles has been brought to awareness by military and civil actions, but it has broader applications in not only future urban warfare, but also other areas as well, such as inspection, surveillance, aerial photography and so on. Personally, I am particularly interested in the area of system control of autonomous aerial vehicle, which model the dynamic behavior of the vehicle using feedbacks to make the behavior desirable, such that it improve the reliability of current UAVs, ultimately achieving the goal of full autonomy and coordinated control of multiple vehicles.

In terms of personal background, I have participated in the Global Space Balloon Challenge in 2016 and 2017, designing, building and launching a payload, which consists of a tracking beacon, arduino logging temperature, pressure, altitude and radiation, 3 HD cameras taking video of the flight to space and back. The balloon burst at about 32,000m above Earth's surface, and safely parachuted back down to Earth.

This experience triggered my interest to pursue in related field. Therefore, I joined the software team of Robotics on Space Exploration in University of Toronto, preparing for the University Rover Challenge, which aims to design and build a Mars-bound spacecraft.

In the recent two semesters, relevant knowledge gained in ECE159, and CSC190 have prepared me for this position regarding programming and electrical circuit. Additionally, I am willing to accept challenges and go beyond my limit. I wish to obtain more knowledge on modeling and control of UAV.

As an aspiring engineering student, I would like to go into Aerospace Engineering in third year. But before that, I wish to keep pursuing my passion in aerospace outside of standard curricula, and accumulate more hands-on experience through this summer research, which I believe would be incredibly beneficial to my future academic and career path.