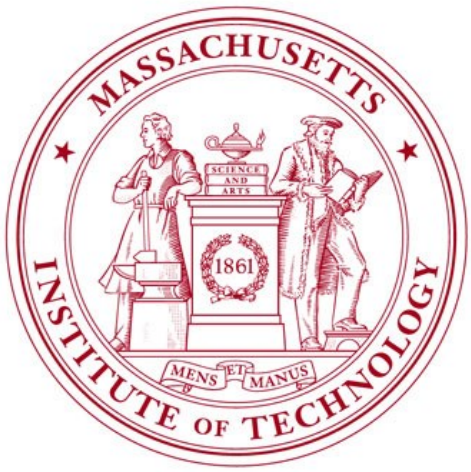


MIT Unmanned Aerial Vehicle Team

Sponsorship Package

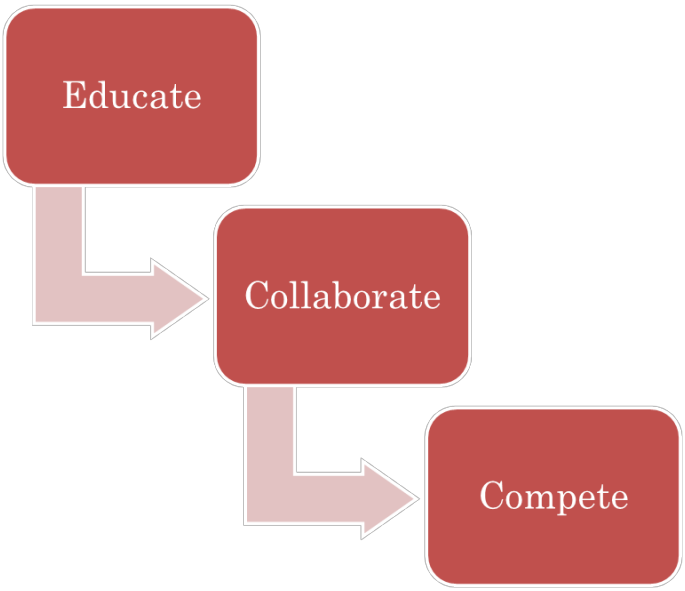
Students providing education, resources and an introduction to the world of aerial robotics

Introduction

MIT UAV

The Massachusetts Institute of Technology's Unmanned Aerial Vehicle Team is a student-run organization which aims to teach members of the MIT community the necessary mechanical, electrical, and computational skills needed to build autonomous and aerial robotic systems.

The club has three main missions:



Missions

Educate

The MIT UAV team holds build sessions in order to teach members practical skills by giving them firsthand experience. The many practical skills that members learn include assembling sensors and electronics, using CAD software, and developing software for embedded systems.

In addition, we teach at MIT Splash to help educate middle and high school students.

Collaborate

The MIT UAV team gives its members the opportunity to work on projects related to aerial robotics. We are currently working with the SENSEable City lab to develop a UAV system capable of giving tours of MIT. The code, circuit boards, and CAD designs created by the team are all open source, so that UAV enthusiasts around the world may too make use of our work.

Compete

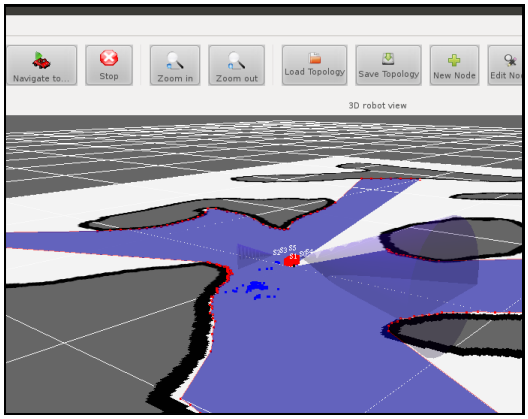
The team will compete in the International Aerial Robotics Competition, an intercollegiate contest in which competitors build quadrotors that can autonomously navigate different environments.

As the team grows, we hope to create our own competition for MIT's Independent Activities Period – a month in which students are encouraged to pursue extracurricular activities. During this month, students will design and build radio-controlled quadrotors and compete in various games and challenges.

Projects

ROS/MRPT For Quadrotors

We have used the open source robotics frameworks ROS (Robot Operating System) and MRPT (Mobile Robot Programming Toolkit) to set up simulation environments and SLAM packages for quadrotors. These will be useful for implementing high level programs for navigation and perception.



PX4 Autopilot

We are currently working on integrating our quadrotors with the commercial PX4 autopilot boards and accompanying QGroundControl ground station software.

Blade Guards and Frames

We are working on designing and manufacturing custom frames for quadrotor systems. We are also creating blade guards to ensure that our quadrotors are safe and robust.

Projects

UDB3 Flight Controller

We have repurposed old UDB3 circuit boards and rewired them for use with quadrotors. We are developing a flight controller, using research from MIT's Aerospace Controls Laboratory. This way, members will get experience modifying PCBs and developing autopilot software.

Small Quad/Big Quad

We have built two quadrotor UAVs to test code on. The smaller quadrotor is robust to crashes, which makes it a good platform to test changes to core flight code. The larger quadrotor can carry a heavier payload, which makes it ideal for testing additional sensors.

Ground Control/Arduino Sensor IO

We have developed a set of applications in Python for plotting sensor data and controlling the quadrotor from a computer using a joystick. We have integrated our quadrotors with Arduino boards for returning telemetry to the ground station, reading from sensors, and sending user commands to the flight controller board.

Supporting Our Team

The MIT UAV team is a unique organization on campus that will show people the value and enjoyment in building aerial robots while teaching them valuable skills in engineering and computer science. Our club would be very grateful for support in helping us accomplish our goals.

Bronze: <$1,000

- Company name and link displayed on website
- Resumes of club members

Silver: $1000-$4,999

- Company name, link, and logo displayed on website
- Resumes of club members
- Logo on club apparel

Gold: $5,000-$9,999

- Company name, link, and logo displayed on website home page
- Resumes of club members
- Opportunity to present your company at UAV team meeting
- Logo placement (small) on one of our UAVs which we will fly on the MIT campus
- Logo on club apparel

Platinum: >$10,000

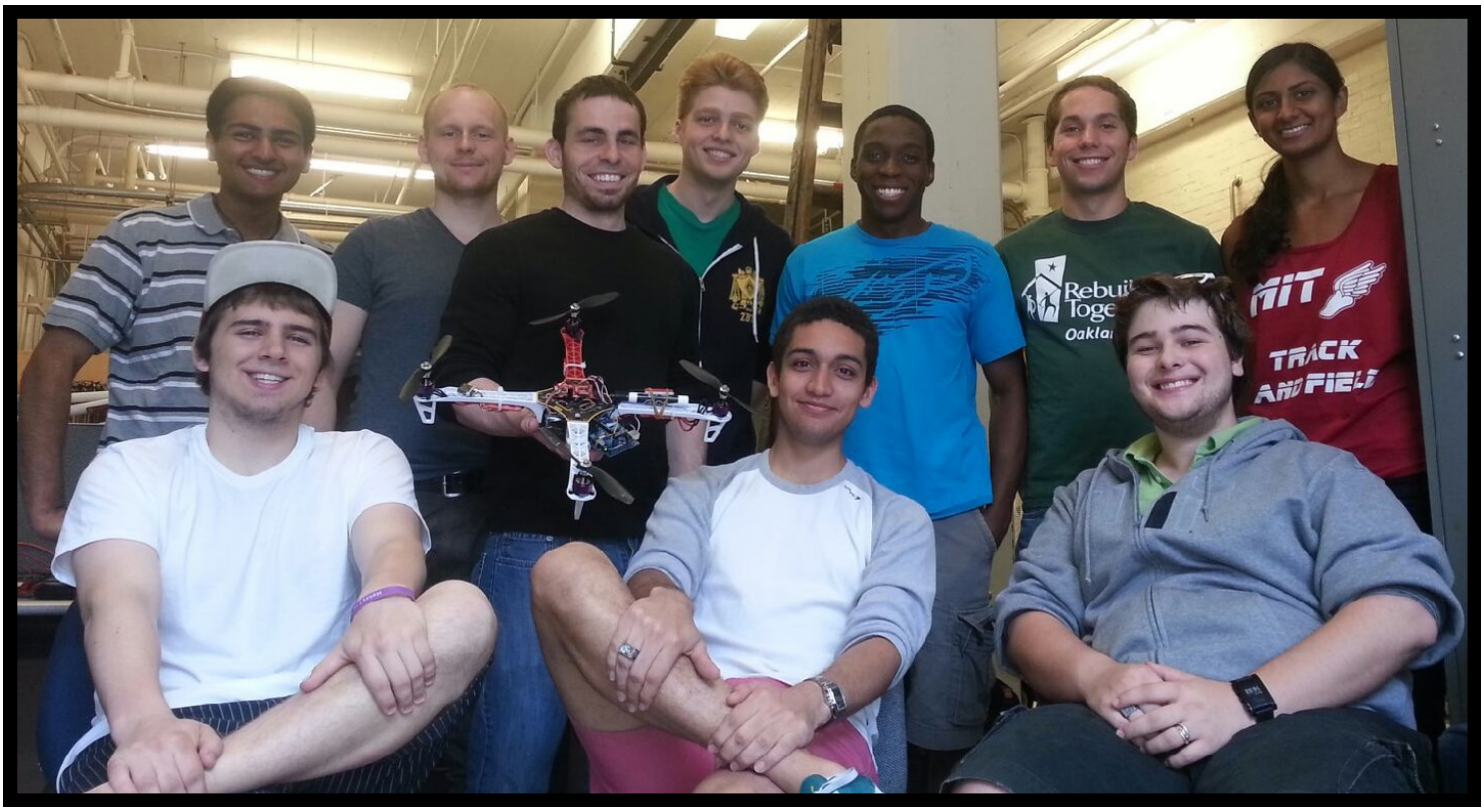
- Company name, link, and logo displayed on website home page.
- Resumes of club members
- Opportunity to present your company at UAV team meeting and UAV team hackathon
- Dinner with the UAV team core team (i.e. officers)
- Logo placement (large) on one of our UAVs which we will name after your company and fly on the MIT campus
- Logo on club apparel

Thank you

MIT UAV would be very grateful for support in our endeavors – whether in funding or in donation of tools.

As a new club at MIT, we would really appreciate any assistance in helping us get started to accomplish our goals.

If you have any further questions, please feel free to contact us at sponsor-mit-uav@mit.edu.



The MIT UAV core team.