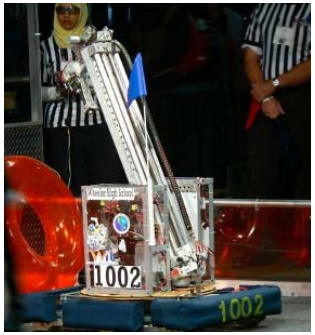
FIRST (For Inspiration and Recognition of Science and Technology) is an organization whose goal is to increase interest in science and engineering in high school, middle school, and elementary school students. Each year they develop and host a robotics competition for high schools around the country and the world. The high schools pair with sponsors to design and build a 120 lb. robot to compete in that year's game. These robots then compete in regional competitions, and if they qualify, the international championships, currently held in Atlanta's Georgia Dome. This will be the eighth year that RoboJackets has mentored local area high school FIRST teams.



TE SESSIONS

RoboJackets also hosts Technology Enrichment Sessions (TE) for local high school teams to prepare for the FIRST competition. The program focuses on teaching organizational skills, engineering methodology, programming, and conceptual design along with numerous hands-on activities.

SPONSORS

RoboJackets is responsible for its own fundraising and requires approximately $60,000 for all of the projects under this umbrella group. Each project has its own budget. Please let us know of your specific interest. RoboJackets thanks our sponsors for their generous support:

Arthur Blank Foundation
Caterpillar, Inc.
General Motors
George W. Woodruff School of Mechanical Engineering
Georgia Tech Student Foundation
Georgia Tech Student Government Association
Individual contributions from:
John Johnson and James Leathers

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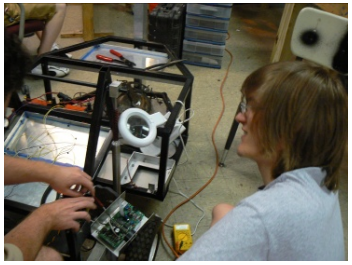
A GEORGIA TECH STUDENT ORGANIZATION IN THE GEORGE W. WOODRUFF SCHOOL OF MECHANICAL ENGINEERING

Georgia Institute of Technology

INTRODUCTION

RoboJackets is a Georgia Tech student organization whose purpose is to compete and promote robotics at Georgia Tech. They also give students an added outlet for obtaining skills vital to their education, and add value to the surrounding community through engineering projects involving robotics. The club started in 1999 with a classroom BattleBots competition and has since grown to more than thirty members. Today, the team competes annually in four different events.



MEMBERS

Active members come from a variety of academic backgrounds. Someone with little or no experience in designing robots can join the group to learn skills such as CAD, welding, machining, fabrication, circuit design, sonar/radar methodologies, machine vision, program implementation, and software architecture. Members can also polish nonengineering skills such as project management, fundraising, and oral and written communication because most competitions require a design report and a presentation.

Aside from the fun of building a robot and working with the group, students gain hands-on experience that many company recruiters look for in a job applicant.

INTELLIGENT GROUND VEHICLE COMPETITION

The Intelligent Ground Vehicle Competition is at the cutting edge of engineering education. The challenge is to design, manufacture, and program an autonomous, unmanned ground robotic vehicle that will negotiate an outdoor obstacle course. The course is littered with barrels, sand traps, ramps, and sidelines.

The yearly competition attracts teams from more than twenty universities; it is organized by the Association of Unmanned Vehicles Systems International and Oakland University, and is sponsored by the Society of Automotive Engineers and DARPA. Our team is designing, building, and programming a vehicle for the May 2008 competition, which consists of three events: autonomous challenge, GPS navigation challenge, and the presentation and design report.

BattleBots is a combat robotics competition whose goal is to destroy the opponent. Robots must survive axes, maces, saws, spears, and pneumatic hammers in order to win. In the 2007 competition our BattleBots team placed fourth and sustained some damage. The team is building and testing a battlebot-type robot for a competition later this year.

Georgia Tech's RoboCup team was started in 2006 and competed in the 2007 RoboCup event, which was hosted by Georgia Tech. They are preparing for the 2008 event in China.

The team competes in the small-sized league of RoboCup. The game pits two teams of five coffee can sized robots competing head to head in a game of soccer. The robots use wireless communication to talk to a central computer that directs their motion and tracks their movements through the use of two overhead cameras.

INDEPENDENT PROJECTS

In addition to the four competition teams, RoboJackets members can take on independent projects, as funding permits. Currently, there are two independent projects and a downhill derby.

The **Inverse Kinematic Arm** explores control algorithms for implementing inverse kinematic control. The **HexaPod** is geared to developing a small-scale, advanced six legged stable walking robot. The **Downhill Derby Car** is our entry into Emory University's annual Dooley Derby. Along with the GT Off-Road team, we represent Georgia Tech in various downhill competitions.