



RoboJackets



THE ARTHUR M. BLANK
FAMILY FOUNDATION

2007 TE Sessions – Intro
September 18, 2007

www.robojackets.org



FIRST Announcements



RoboJackets



RoboJackets JumpStart



- What
 - \$1500 Grants
 - Only covers build
 - Any team (not limited to rookies)
- Apply
 - 1 page on how your team would benefit (10/19)
 - Roman (shtylman@gmail.com)
 - Brian (bguerriero@gmail.com)



RJJS General Requirements



- Participate in 2007 Technology Enrichment Sessions
- Participate in the 2007-2008 FIRST Robotics Competition (team must raise registration costs)
- List RoboJackets as a sponsor on promotional materials and robot
- Attendance to the remote FRC Kickoff in Atlanta
- Participate in the brainstorming session at the kickoff



RJJS Technical Requirements **CAT**[®]

- Participation in weekly design collaborations during the build period
- Choose a drivetrain design by the end of the 1st FRC build week (custom/kitbot)
- Have a complete robot design reviewed at a design collaboration by the 3rd FRC Build week



Info

- Sponsors
 - Caterpillar
 - Arthur Blank Foundation
- Key Contacts
 - Brian Guerriero – bguerriero@gmail.com
 - Stefan Posey – stefan.posey@gatech.edu
- Every Tuesday 5pm - 8pm



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About This Year



- Basic
 - Ways to build, how to build, and how to succeed.
- Advanced – Special Topics
 - Motor Control, Manipulation, Programming, etc.
- Lectures and notes (pdf)
 - <http://www.robojackets.org> (click on TE Sessions)



TE Schedule



Basic

- Introduction to TE 09/18
- Intro to ME 09/27
- Mechanical Power Trans 10/02
- Drive Types 10/09
- Manipulation 10/16
- Manufacturing & Safety 10/23
- Fluid Power 10/30
- Electrical Power & Storage 11/06
- Programming 11/13

Advanced / Special

- Topics in Computer Vision
- Autonomous Control
- Technical Design
- Adv. Mech Power Trans
- Motor Control
- Manipulation I
- Manipulation II



What is a robot?



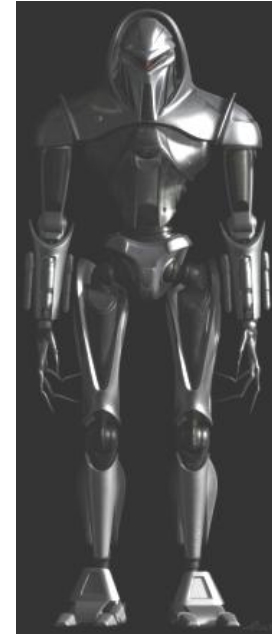
- Characteristics
 - Brain Power
 - Detects environment
- Basic Idea – A vehicle / platform that can compete tasks with out human interaction.
 - Autonomous capabilities and Sensors



Marks of a Good Design



- Red Scanners
 - Kitt, Cylons, Gundam, RoboCop
- Shiny
 - Transformers
- Self aware
 - T1000, Data





Applications



- Commercial / Industrial
- Government / Military
- Research
- Robotics & Georgia Tech
- College Competitions



App: Commercial / Industrial **CAT**[®]

- iRobot
 - Roomba
- KUKA
- FANUC
- EPSON





App: Government / Military



- Samsungs Sentry in the DMZ
- UAV
 - Surveillance
 - Communication
- Rescue
- Bomb Disposal

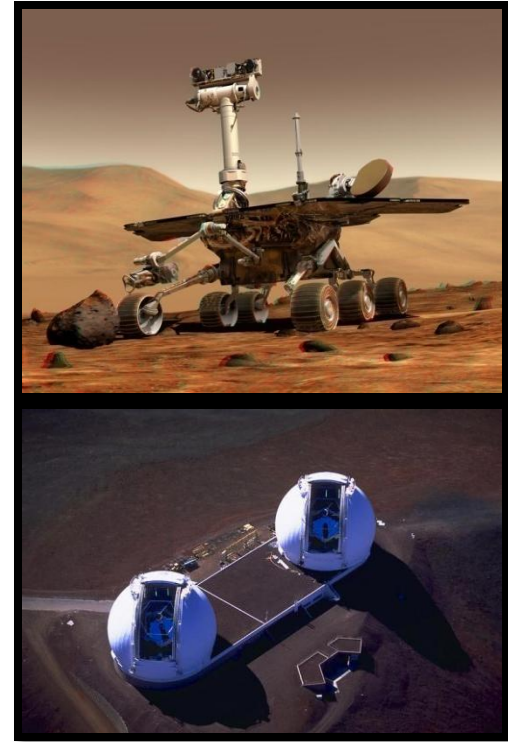




App: Research



- DARPA
 - Grand Challenge
- NASA
 - Rovers, Landers, Satellites
- Telescopes





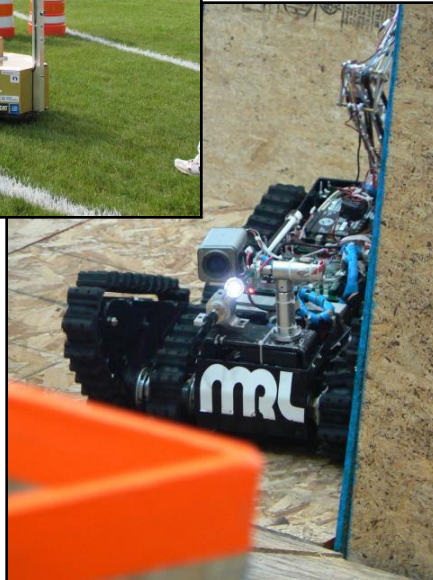
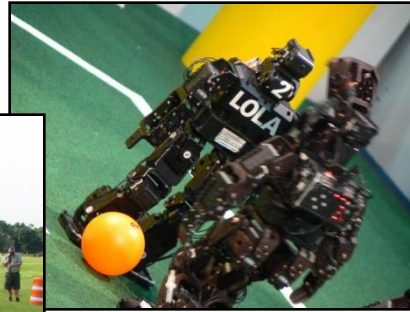
App: Robotics & Georgia Tech **CAT**[®]

- Robotics and Intelligent Machines (RIM)
 - <http://robotics.gatech.edu>
- BORG Lab
- GTRI
- UAV Lab
 - IARC
- IMDL
 - Rescue Crawler, Haptic (force feedback)





App: College Competitions



- FIRST*
- RoboCup
 - Small Size*
 - Medium
 - Humanoid
- BattleBots*
- AUVSI
 - IGVC* – Ground
 - AUVC – Underwater
 - IARC – Aerial
- IEEE
- More

Note * = RoboJackets Team



TE Session Final Competition **CAT**[®]

- When: November 17, 2007 @ 10 AM
- Where: MARC
- Food will be provided
 - Kosher and Vegetarian
- Official FTC Scrimmage



Mini Competition



- Objective
 - Tower
 - Hold 1 bag of candy
- Supplies
 - 2 Boxes of straws
 - 1 Roll of tape



Legal



These slides and more are available at <http://www.robojackets.org>.

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For more info contact the RoboJackets.