







- Ways to build, how to build, and how to succeed.
- Advanced Special Topics
 - CAD, Topics in Robotics, Controls, etc.
- Lectures and notes (pdf)
 - -<u>http://www.robojackets.org</u> (click on TE Sessions)

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What is a robot?

- Characteristics
 - Detects surroundings / environment
 - Make decisions based on surroundings
- Basic Idea A vehicle / platform that can compete tasks with out human interaction.
 - Autonomous capabilities and Sensors

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Roots and History

- 3rd century BC first automated device
- 1920 word robot first used
- 1941 Asimov coins robotics
- 1963 1st pallet robot

Science Fiction



– Kitt, Cylons, RoboCop, T1000, Data

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Laws of Robotics

- A robot may not injure a human being or, through inaction, allow a human being to come to harm.
- 2. A robot must obey orders given to it by human beings, except where such orders would conflict with the First Law.
- 3. A robot must protect its own existence as long as such protection does not conflict with the First or Second Law.

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Motivation:

- Strong structures can fail catastrophically
- Geometry of design can contribute to or prevent failures
- Material selection can also be crucial



















































