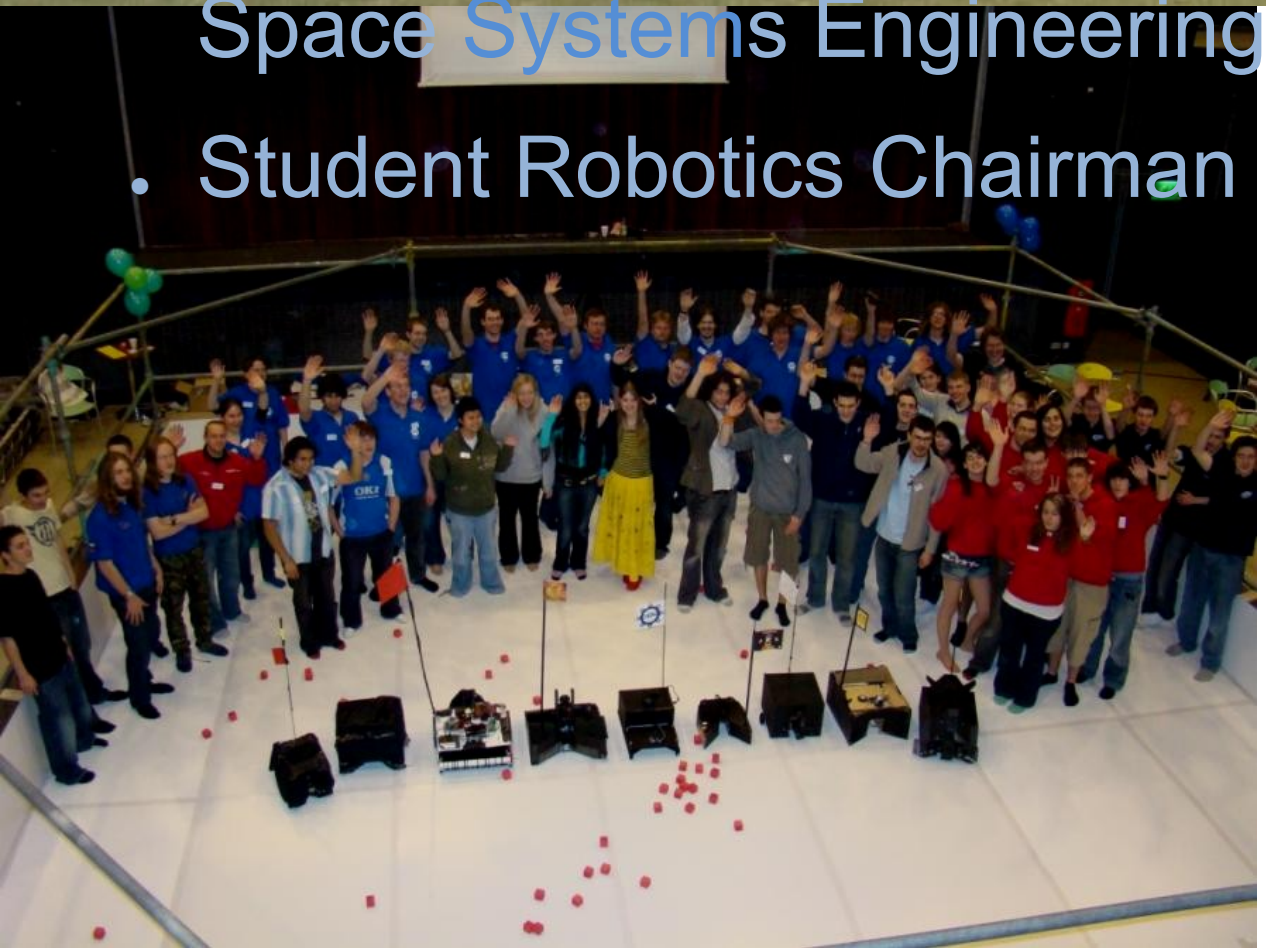
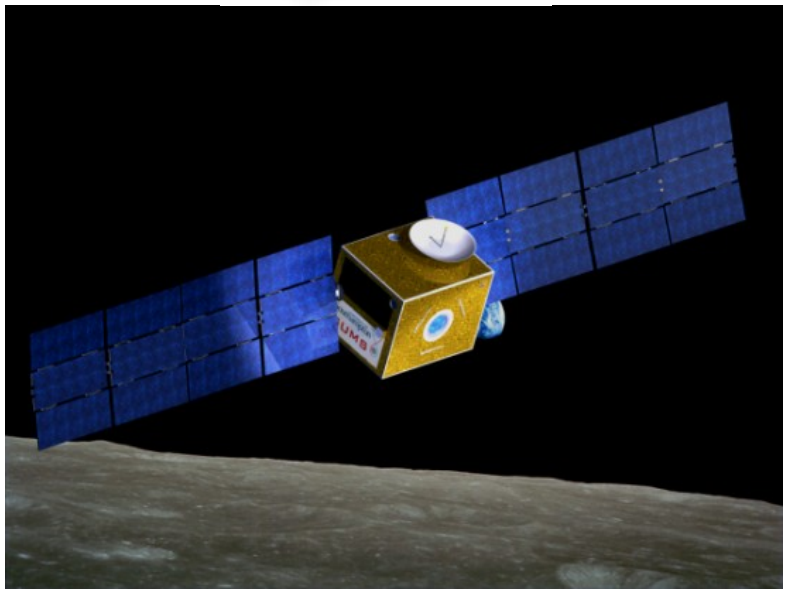
STUDENT ROBOTICS

2009 – 2010

Planning and Teamwork

- Me = Aron Kisdi
- 4th year MEng in Space Systems Engineering
- Student Robotics Chairman





Presented By

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Ask me for help! I will point you in the right direction!

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From MiniGame to Timeline

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KickStart

Competition

Christmas | A/AS-levels | Easter

I. II. III.

I. Robot moves

These are called Milestones. You get competition points for reaching them. Contact us via, forum, online, or by mentor to let us know.

II. Robot has mechanisms to achieve goals

III. Robot uses a variety of sensors to understand and interact with its environment.

Getting Started

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Getting Started

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Brainstorming

- No idea is stupid...
- …but keep to the topic

"Aim for the moon, that way, even if you miss you'll still be amongst the stars."

W. Clement Stone

"Goals without action are empty dreams. Actions turn dreams into goals. Even if a person misses his goal, it does not make him a failure. Delay does not mean defeat. It only means we have to revise our plan to reach our target. Aiming low is the biggest mistake people make. Goals should be challenging! "
Unknown commenter on yahoo.com

Role-play

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- You are in a brainstorming session to decide the basic outline of your robot.
- Give an example of an idea that you wouldn't say!

Any bad ideas?

Something is a bad idea if it is nonspecific. You have to make sure the rest of the team understands your idea. Use drawings, models to explane.

Off-topic is not good. Stay away from antigravity and ion-cannons.

Apart from that everything goes.

For example a Howercraft might be a good idea! Discuses and prototype it to find it out.

Teamwork

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- Take roles
  - Team coordinator
  - Designers
  - Builders
  - Programmer**s**

Do not leave the programming to one person.
It isn't hard and loads of fun once you get your head around it!

- Switch roles if needed

Assign roles for tasks rather than the whole project

Team Work

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You are a team!

Don't blame if someone haven't done his job. Try to work together to sort it out. If you blame someone you might loose that member. If you help him he might do an amazing job next time.

Having 1 person for programmer will most likely fail.

Make sure you help someone if he/she struggles with his/her task.

On the other hand, when you are working on a task it is your responsibility to do your job on time. But don't be afraid to ask for help from the rest of the team

Team Work

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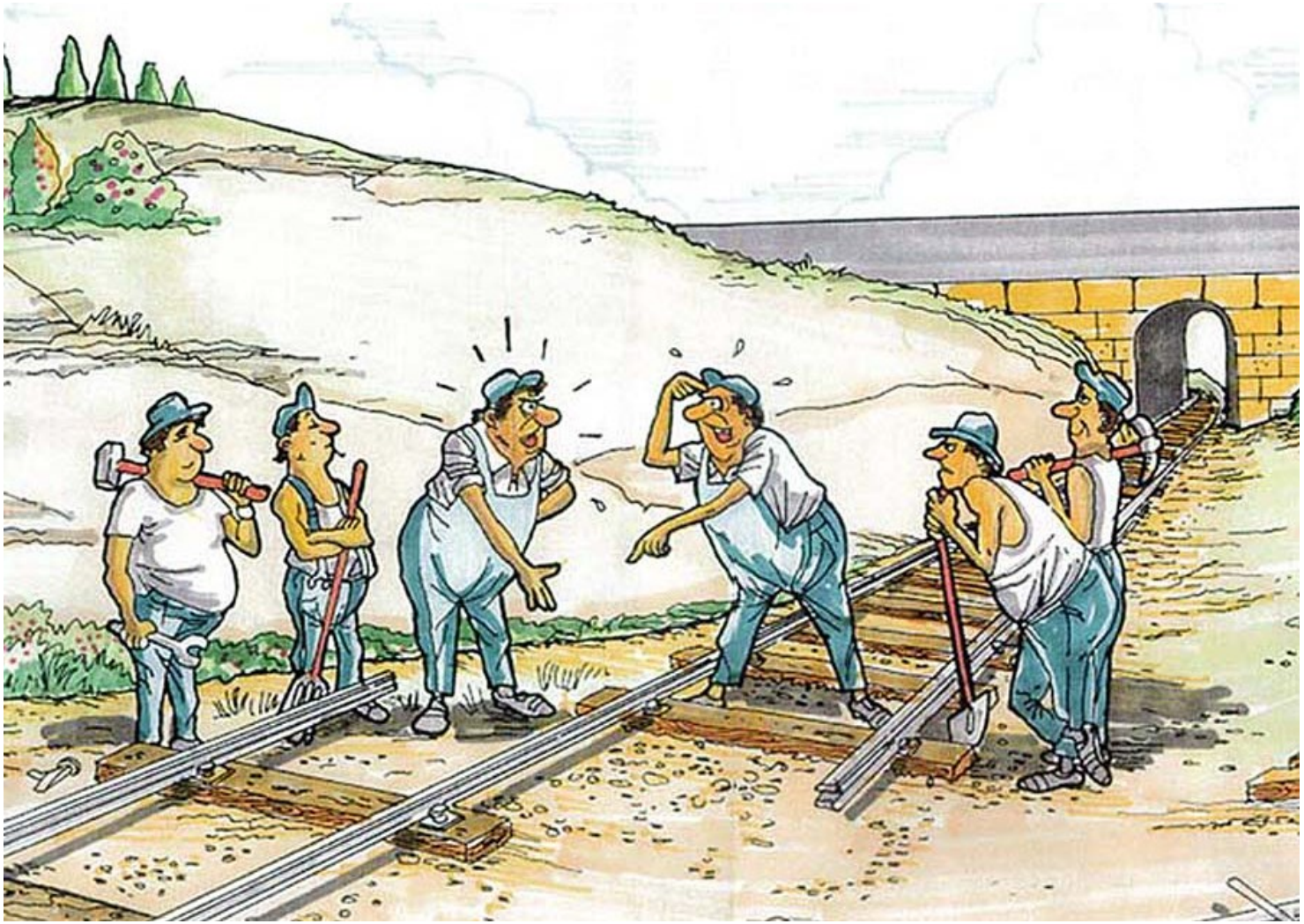

Make sure you know what the rest of the team is doing!

Decision making

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"OK, all those in favour of delegating decision-making, shrug your shoulders."

Budget = £70

Don't be afraid to use it!

Make decisions early! When you are on a meeting or building session make sure you don't spend to much time on any decision.

Good ways to make decisions:
-listing advantages and disadvantages
-Prototyping something
-Other ways to which gives you more information, better understanding of the decision you face.

Discuss => Decide => Do!

Role-play

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You are approaching a problem: hunger

You come up with two solutions:

vs

How do you make the decision?

Role-play - answers

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How do you make that decision?

-List pros and cons
-Try both! Be greedy ☺ (this would of course mean prototyping
-collect more information (research)
-consider resources and time as a factor

Building

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Start simple! Make sure the critical parts work well before you build on the more complex systems

E.g.: you might have an amazing arm which can juggle balls but if your robot doesn't move that is no use

Take small steps. Modular design might be a good idea but not always.

Fail

Role-play

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You came up with a great idea, which, according to your calculations works perfectly. Even your team mates agree.

Would you prototype it?

Yes! Real word can be very different even from the perfect calculations.

Prototyping

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Try

Do this many times
A not working prototype
doesn't mean your idea doesn't
work. It means you learned more
About the challenge you face

Succeed

You might just get to the moon ;-)

Fail

Chairman's Award

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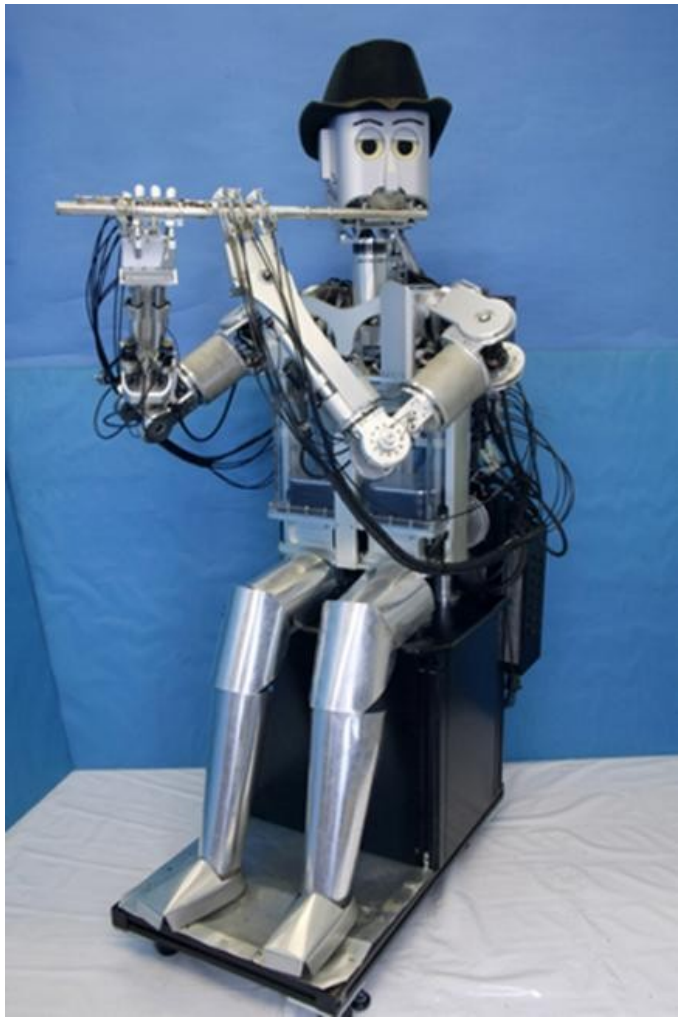
- To promote initiative, good ideas and clever engineering
- You gain points for reaching Milestones and for impressive (and working) designs
- **Share your success!** Student Robotics blog, forum or even YouTube, twitter.
- But strictly no plagiarism



Ask for Help

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- Use a online search engine → Independent initiative
- Use the Student Robotics website:

  studentrobotics.org

  - Forums!
  - Docs!

  → Share, search, succeed

- Ask your teacher
- Ask someone from Student Robotics

Summary

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- Aim for the Moon!
- Make design decisions
- Start simple
- Prototype
- Start programming early
- Don't be afraid to ask for help
  and to share your experience