RoboCup Junior New Zealand

Bio-Mimicry Challenge

BRIEF:

As an engineer in one of New Zealand's top robotics laboratories, you are told about a new and exciting research opportunity to develop a new robotic creature or to present a robotic solution inspired by nature. To be part of the research team you have to present the prototype of your idea, via video, to showcase how it works and the special features it has. You may get some inspiration here.

SPECIFICATIONS:

1. This needs to be your own design. You are encouraged to research and find examples of what others have already done, but your final product should be your own: not a copy of someone else's idea.

- You will create a diary to show evidence of:
- The research you did,
- How you came up with the idea for your design (try brainstorms, flowcharts, drawings, etc),
- Planning your design and program (justify why you made the decisions you made),
- Pictures of your build along the way,
- Anything else you want to share about your design.

2. Your robot will not be remote controlled, you should use hardware and write a program that enables it to be autonomous.

3. The robot should have features that can be found in the animal(s) that you are imitating (eg the way it moves, the skills it has).

4. You're absolutely welcome to decorate your robot to make it look more like the animal(s) you're trying to imitate. Just make sure that you don't spend all your time on decorating and forget about the programming!

5. You can use any electronics and build methods for your robots: Arduino, EV3, Raspberry Pi, 3D printing, old milk bottles⬚ Get creative!

6. Don't forget to have fun!

SUBMISSIONS:

This should include:

1. a video (max 5 minutes) of you demonstrating your robot as it shows off its animalistic features.

2. Include an introduction where each team member discusses their role in the team,

3. A discussion about why you think you robot is a good example of a biorobot,

4. Describe the features that you built/programmed into the robot, and why they're special

5. Each team member should discuss what they found the hardest, and what they enjoyed the most about this challenge.

6. Your robot in action.

7. A document (.pdf is best) with all your supporting evidence, outlined in (2.) in the specifications. It is helpful for us if you include photos of the robot in this document so we can see how well it has been built.