

John M Thompson Innovation Fund Application

Eligibility: Western Engineering student with tuition paid in full.

1. Principle Innovator Name: Bryan Heddle Email: Bheddle4@uwo.ca
2. Verify all Western tuition has been paid in full: yes
3. Engineering Department: Mechatronics
4. Individual Yes or Team (if team list all teammates name and emails)

5. Summary of idea (~100-200 words)

The goal is to create a two foot tall humanoid robot that is capable of completing tasks and navigating its surroundings. This robot will use SLAM to navigate it's surroundings and AI for object recognition. Implementing an LLM for conversing is also a goal.

Ever since I was a kid I've enjoyed robotics, and especially toy robots. Although all the toy robots weren't really the greatest. Essentially my goal here is to create a "toy" robot of the future, a very expensive "toy" robot though.

6. How will you measure success? (~100-200 words)

Since this is such a large project I will measure success in steps. The first step is the electro-mechanical design, the success of it will be based off how well the robot is able to move, and how much power is required to move each limb. I will be using smaller motors paired with pulley systems to increase the torque of the motors, hoping to have smaller overall power consumption, while still allowing for decent movement. This is due to the real life constraint that robots would normally have. The next step which is quite a large one is the software/AI, the success of this step will be measured by how well the robot is able to navigate its environment. It will also be measured on response time of the robot after it is told to do something, cost of resources, and size of the AI model/models.

7. For open source projects provide link to documentation (including BOM, CAD, electronic schematics, software and OS license) or OSHWA certification #: I have yet to start the CAD for this project.
8. For proprietary projects - link to provisional patent or application #:
9. Value of funds requested: \$ 3262.95
10. Use of funds. Attach a bill of materials including component, number, cost and source url and/or processing quotes.

By sending this application you agree to use the funds for the stated purpose and report back to the Thompson Centre on outcomes if successfully awarded funding.

Email completed forms and supporting cost information to:
joshua.pearce@uwo.ca

