Gesture Controlled WALL-E Robot

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BACKGROUND

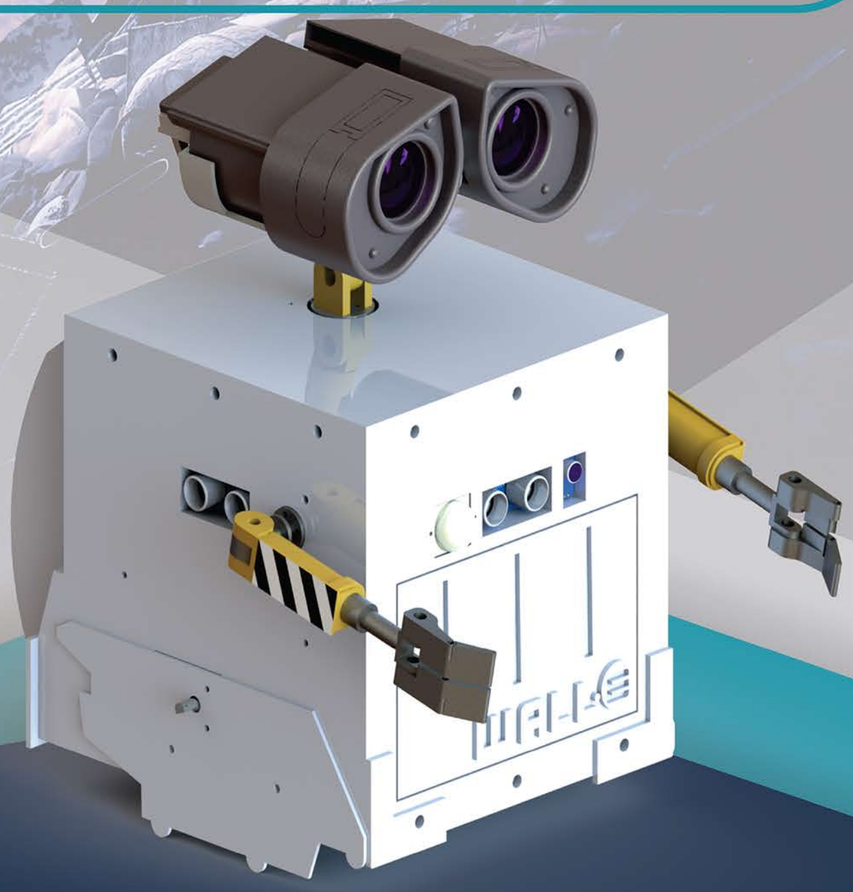
- Interactive toys are a significant part of children's cognitive development, heightening their understanding of self and environment
- Children with congenital deformities are at a disadvantage when developing their cognitive and motors skills compared to other children

OBJECTIVE

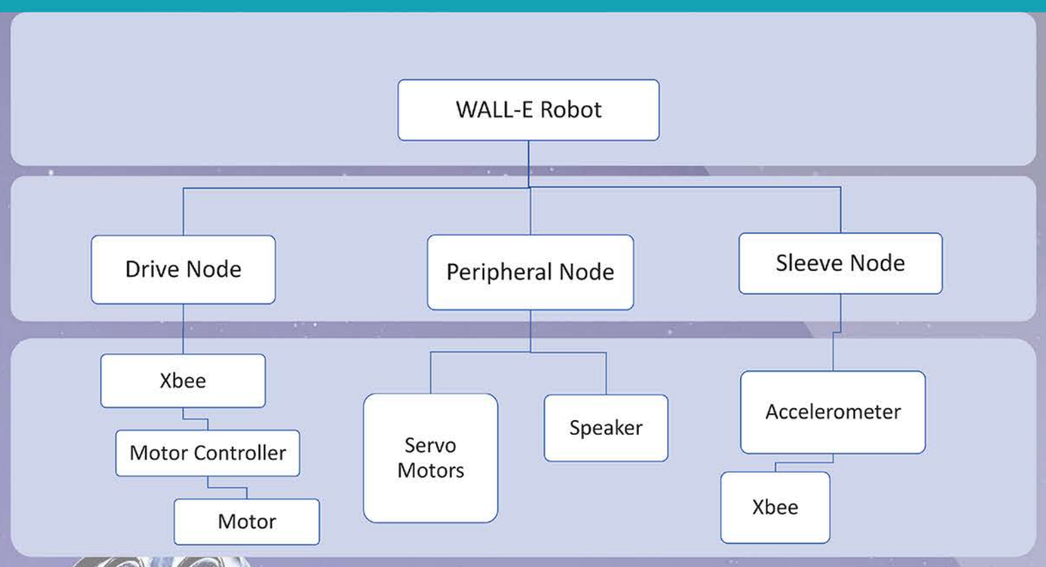
- Make an interactive toy aimed to improve cognitive development of children with congenital deformities or other physical disabilities
- Comply with Canadian Toys Regulations

SOLUTION

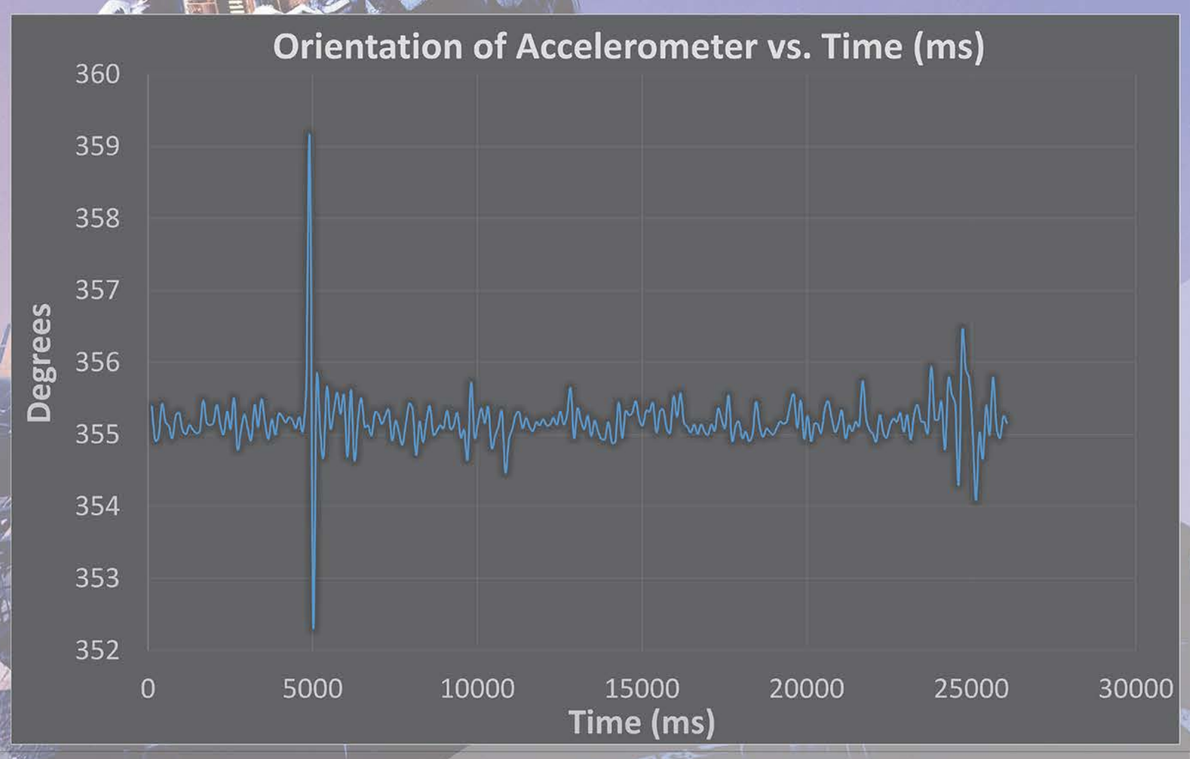
- Design a gesture-controlled robotic toy through a sensor interfaced wearable sleeve
- WALL-E based design to appeal to children
- Versatile sleeve design that can be used on multiple limbs



DESIGN



- Xbee for wireless communication
- Accelerometers to detect motion
- Arudino used for the motor controller
- Final design is 3D Printed
- Wheels from a tank drive robot



Plot showing tracking of robots position along a linear pathway

FUTURE

- Make toy smaller so it is easier to carry around for children
- Add Image Processing
- Make compatible with various environments such as water

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