Conclusions

It is better to use small motors to move individual parts.

3 motors cannot give too much control over the legs.

Precision is vital to control the machine.

Significance

Biped Motion is probably one of the most complex engineering problems in nature.

Understanding all the processes involved will provide deeper understanding of our own mechanics.

Robots with Biped Motion have great industrial potential.

Abstract

Nature was able to engineer biped motion millions of years ago. However, we humans have attempted to reproduce it on our machines with little success and felt short against the incredible design challenge it represents. Therefore, the area of biped motion has many gaps to fill, gaps that can only be filled by research. In my case, I began with a simple approach based on COG and simple mechanical means to control the walking. I went through several designs, only succeeded from the third one. The main problems were stability, weight management, piece fragility, error rates in LEGO joints and relatively small controlling capabilities from the brain of the machine. Eventually, this research will lead to my better understanding of biped motion, allowing me to contribute to what has already been done and hopefully bring some light into the field.

Motivation

Understand how humans are engineered

Future Applications

More movable machines

Human looking robots

Energy-efficient Motion

Methodology

Design leg with the following criteria:

Variable Center of Gravity (COG)

Energy efficient

Stable

Can process information

Possesses equal human

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