**Outline**

Abstract

* *Explain purpose of study, basic design of the Dynamixel servo experiment and findings.*

I. Introduction

* *Describe significance of the experiment and relevance to the robotics field.*
* *Discuss motivation of the study—the bipedal heteromorphism robot*

II. Methodology

* *Explain each step of the experiment where the command packets is sent, and how the experiment will respond on the oscilloscope*

III. Results

* Display graphs of each result based on the number of servos: single, three, six, nine. Explain each graph briefly with captions.
* Summarize results.

IV. Analysis

* *Explain the high variation in the results, compare to Jamil/James Paper.*

V. Conclusion

* *Conclude that there does not appear to be a significant different in the delay between the command packet and the servo response*
* *Explain implications with multi DOF robotics such as the bpidel heteromorphism robot*

VI. References

### [1]. Smith, J. and Jivraj, J. *Analysis of Robotis Dynamixel AX-12+ Actuator Latencies.* Symposium on Brain, Body and Machine. Montreal, Canada. Nov. 2010.

### [2]. Mensink, A. *Characterization and modeling of a Dynamixel Servo.* University of Twente. (2008).

### [3] *Dynamixel AX-12 User’s Manual*. Robotis. Seoul, South Korea. (2006).