EE149/249A Project Report, Fall 2015 Reia Cho, Christian (CJ) Geering, Nathaniel Mailoa, Rachel Zhang

reWRITE

I. Introduction

II. BILL OF MATERIALS

III. SYSTEM

- A. LightBlue Bean
- B. BNO055 Absolute Orientation Sensor Breakout Board
- C. Li-Ion Battery
- D. Force Sensor
- E. Button and LED Sequin

IV. CASING

V. Position Reconstruction

- A. IMU Sensor Data
- B. Filtering and Thresholding
- C. Transformation to Fixed Reference Frame
- D. Velocity Adjustment
- E. Tip Position Reconstruction
- F. Plotting

VI. QUANTITATIVE ANALYSIS AND SCHEDULING

VII. MODE OF OPERATION

VIII. ACKNOWLEDGEMENTS

We would like to acknowledge the following individuals for their support and contribution in this project.

- Trung Tran, National Instruments
- Prof. Sanjit Seshia, UC Berkeley
- Matthew Weber, UC Berkeley
- Eric Kim, UC Berkeley
- Casey Rogers, UC Berkeley 3D Modeling Club

IX. APPENDIX 1: LIGHTBLUE BEAN CODE

X. APPENDIX 2: PYTHON CODE