Many tools are used to generate motions such as optimization theory, reinforcement learning, and control theory. Researchers implement their findings onto various robots such as the Sarcos Master Arm and the NAO small humanoid.

The Computational Learning and Motor Control Lab focuses its research on human movements such as walking and manipulation. This summer, I worked in the CLMC lab where I learned trajectory planning that will allow robotic maneuvers to be performed smoothly, thus allowing natural movement that are easier to control.

To complete this project I was introduced to the concepts of:
- Calculus
- Matrix Math
- Programming

I learned how to program in MATLAB, a computational tool and programming language used for:
- Linear Algebra
- Implementing Algorithms
- Data Visualization

For my project, I wrote code for minimum jerk trajectory planning that produced a smooth:
- Position trajectory (x)
- Velocity trajectory (xd)
- Acceleration trajectory (xdd)

There are many ideas and concepts I would like to share with my classmates:
- think about problems with out having the solution in mind
- in order to focus their attention on the methods used to solve the problem

This will allow them to:
- master their skills in the methodology
- avoid discouragement if they don’t get the out come they want.

Introduction

Project Objective and Results

Important Skills Learned

Overview of Professor’s Research

Advice for Future SHINE Students

Acknowledgements