

# EE267 Spring 2016/2017 Project Proposal

SUNet ID: xiaofu, yyu10

Name: Alex Fu, Yangyang Yu

By turning in this assignment, I agree by the Stanford honor code and declare that all of this is my own work.

## Problem Statement

We want to implement a “magic wand” that can recognize certain “spells” based the hand tracker gestures. We will use a IMU for hand tracking. Then we will build a classifier to recognize different kinds of “spells”.

## Previous Work

There is an application called “Fantastic Beasts” on Google Daydream that uses the hand controller as a wand. However, it does not recognize any gestures more than a click. We would like to build on that and recognize more complex hand gesture patterns to enable a full experience of using a magic “wand”.

## Approach

We would like to build a neural-network based classifier to recognize multiple hand gesture patterns to simulate the effect of a “magic wand”. The neural-network classifier should allow us to classify complex, non-linear patterns.

In addition, since we will be using a IMU to track the user’s hand, it will be more precise and descriptive than the current hand tracking with only a camera.

## Timeline

4. A timeline with the tasks and milestones necessary to complete the project. Dont embark on an open-ended mission - know when you will be done. Write down the specific end goal and the milestones necessary to get there. Associate a realistic time with each milestone.

- By 5/29: Build simple version of the classifier, generate raw hand gesture data.
- By 6/2: Improve and refine the classifier.
- By 6/9: Create a demo showing the classifier can recognize different “wand” patterns.
- Stretch goal: Create a unity (or Android) application to run on Google Daydream showing a “wand” and perform different tasks based on the recognized patterns.