Megan Schoendorf

CS221 Artificial Intelligence

Project Ideas

Due: Oct 1st, 2013

**Idea 1: Slackline Companion**

Background: a slackline is a static rope tied between two strong objects, usually trees, that people try to walk on. It is essentially a tight rope low to the ground.

When a person is practicing their slacklining skills, it would be useful to know the amount of time that person was able to balance before falling off. Unfortunately, timing these events is difficult as the task of balancing takes up all limbs and concentration. An accelerometer (eg in an iPhone) strapped to the slackline measuring the movement could be used to automate the timing.

The input to the system would be the accelerometer data: how the slackline is moving and vibrating. I have set up a slackline and played with it a lot – there is a clear difference in the way the line vibrates when someone is about to get onto it, when he or she is walking or bouncing on it, and when he or she has just fallen off. The output is a prediction of whether these movements correspond to someone being balanced on the slackline or not. The metric for success would be, for several test sets, the difference in time between the person actually getting onto and off of the slackline compared to when the algorithm predicts those events occurred.

One challenge in this project will be getting a system that is able to work in real time instead of analyzing historic data. Another would be adding the feature of also identifying which person is walking on the slackline from a set of users.

A preliminary search shows no other work being done to this end. Perhaps a state based model, such as a markov decision process, could be used to tackle this problem.

**Idea 2: Read My Email for Calendar Events**

I spend a large portion of my time reading email and converting those emails into calendar events.