**Bird Monitor Project Scope**

**Thesis:** Bird weight is a key indicator of bird health. This product is designed to address a gap in how bird owners monitor the health of their birds.

**Problem**: Tracking changes in a bird’s weight over a period of time requires constant, inconvenient, manual use of a specialized scale. As such, drastic changes in bird weight often go unnoticed until serious health problems develop, endangering birds and putting undue stress on owners.

**Solution**: We are developing a “smart perch”, a permanent fixture in a bird’s cage that will take a weight measure whenever the bird is on the perch. This perch will provide owners with a constant stream of weight information, allowing owners to track a bird’s weight far more effectively and address health problems before they become severe. Additionally, the perch will monitor “activity” in the cage, as defined by motion, allowing owners to sync changes in weight with changes in activity levels.

**Current Status:** Our existing prototype consists of the smartperch hardware and data acquisition pipeline. The hardware is a 3d-printed perch which has been mounted to a load cell food scale. The current electronics is based on the Particle Photon Wifi development board, and we plan to scale up with this board going forward.

**Project:** The main priority for the CS project is to build a front-end application (mobile and/or web-app) which enables the end-user to view information from their smart perch. Particle provides an API for interfacing with their development board. We are also considering a back-end server / data storage service, but our expertise lacks greatly in this area and are open to suggestions from the team. Potential features can include:

* Daily, weekly, monthly tracking (**required**)
  + Weight
  + Motion / activity level
* Function to share .xls / .pdf printout of above data (**required**)
* Supplementary information (**optional**)
  + Nearby veterinary clinics
  + User-defined alert metrics (if the bird gains / loses too much weight, send alert)