



Wind Sensor Project Proposal

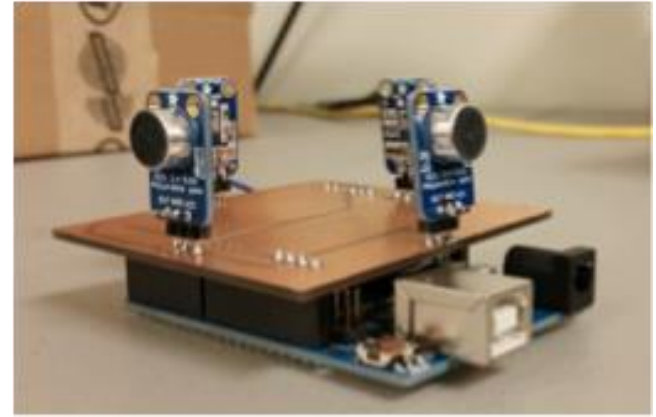
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Project Overview

Objective: To build a wind sensor that is low cost, small, reliable, durable, and has no moving parts that detects 2D speed and direction.

- Current design uses four microphones
- Limited by processing speed
- Single microphone works well
- Not deployable
- Works for “steady state” values (processing)



Goals & Learning Expectations

Acquire the tools necessary to implement ideas (general purpose)

PCB Design (Fritzing) & Fabrication

3D-printing & design

How to create a standalone

Create a working, reproducible model (solve problem of current design)

Modular

Easy to “manufacture” in-house

Deployment

Housing

Approach

- **Improve current platform**
 - Realizable
 - Familiarity
 - Low cost
 - Tangible benefits
 - Modular design
 - Skill acquisition
- **4 Controllers & 1 Processor**
 - Atmega328 (\$5) “Brain”
 - Atmega-8 IC (\$1) x4
 - Flexible chips, low power
- **Switch Platforms (Teensy 3.2)**
 - Faster processor (x4.5)+
 - “Simpler”
 - \$20 base cost
 - Standalone? Power?

Problems

- **Improve current platform**
 - Interfacing on standalone
 - Power cost?
 - Not “elegant”
- **Switch Platforms (Teensy 3.2)**
 - Unfamiliarity
 - Standalone?
 - Power cost?
 - Hardware cost?
 - Platform reusability?
 - “Throw away” a lot of progress
 - Working from ground-up
 - Very high amount of unknowns
 - Potential for unfinished project or “stuck” (goals?)

Current Progress

Started on Fritzing tutorials

Figured out tangible goals

Road-mapped a plan

Started learning 3D printing design

Researched parts & costs

Researched alternatives

Questions?