VISUALIZING MOVEMENT

Arduino Project Plan, Naomi Touchet, Spring Quarter 2016

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| **Week 1 (3/28–4/1)** |  |  |  |  |
| **Done?** | **Goals** | | **Notes** | |
| Yes | Plan Project | | Materials:   * Ballet slippers * IMU (Inertial Measurement Unit) * Pressure sensitive material (to make pressure sensors) * Bluetooth * Microcontroller (Adafruit FLORA) * Connective thread * Lipoly batteries | |
| Yes | Order Materials | |
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| **Week 2 (4/4–4/8)** |  |  |  |  |
| **Done?** | **Goals** | | **Notes** | |
| Yes, I'm going to use Processing for the visualization | Figure out what platform to use for visualization | |  | |
| Yes | Connect the old shoes (light-up-kicks) with Processing | |
| Yes | Get Arduino and Processing communicating back and forth (serial 'handshake') | |
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| **Week 3 (4/11–4/15)** |  |  |  |  |
| **Done?** | **Goals** | | **Notes** | |
| Yes | Make a circle that shows up when you put pressure on the toe | | Visualization of pressure:  -A shape drawn on the screen, different parts of the shape relate to the different pressure sensors in the shoe.  -Increased pressure = more opaque (have a gradient from center point of pressure out to the rest of the foot) | |
| Size is done, opacity still needs work | Make it so that the circles' opacity and size is dependent on pressure. | |
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| **Week 4 (4/18–4/22)** |  |  |  |  |
| **Done?** | **Goals** | | **Notes** | |
| Yes | Start the Initial build of ballet slippers: with Arduino microcontroller, pressure sensors, Bluetooth, IMUs | |  | |
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| **Week 5 (4/25–4/29)** |  |  |  |  |
| **Done?** | **Goals** | | **Notes** | |
| Yes | Finish building the first slipper | | Pressure visualization should work with slippers similarly to how it worked with shoes, but it will possibly have a different number of pressure sensors. | |
| Working on it | Figure out how Bluetooth communication will work (write the code for it). | |
| Working on it | Get shoes working with the computer (communicating with Bluetooth) | |

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| **Week 6 (5/2–5/6)** |  |  |  |  |
| **Done?** | **Goals** | | **Notes** | |
| Yes | Finish building second slipper | | Document the process, so that it could be recreated. | |
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| **Week 7 (5/9–5/13)** |  |  |  |  |
| **Done?** | **Goals** | | **Notes** | |
| Working on it | Figure out how to add a visualization for movement (measured by the IMUs) | | The pressure sensor visualization (simple shape) will now move, and become a line that is drawn based on the movement of the foot (while keeping the opacity dependent on pressure). | |
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| **Week 8 (5/16–5/20)** |  |  |  |  |
| **Done?** | **Goals** | | **Notes** | |
|  | Work on visualization of movement. | |  | |
|  | Add complexity to visualization if there’s time | |
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| **Week 9 (5/23–5/27)** |  |  |  |  |
| **Done?** | **Goals** | | **Notes** | |
|  | Troubleshooting | |  | |
|  | Start final write-up about project | |
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| **Week 10 (5/30–5/3)** |  |  |  |  |
| **Done?** | **Goals** | | **Notes** | |
|  | More troubleshooting! Make it awesome. | |  | |
|  | Finish final write-up | |
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