JENNELLE WONG

PORTFOLIO 2019

Hi, I'm Jennelle...

I love to build and tinker. I'm a bit of a fixer who has worked all over the product and dev stack.

I specialize in crafting clean, thoughtful and seamless experiences for IoT and consumer products.

In my spare time, I like to design and print my own 3D knick-knacks. I also share my personal projects on Thingiverse and Instructables. Do check 'em out!

SKILLS

design

Hardware UX Design
Mobile UX Design

Wireframing
Sketch
Invision
Origami
Flinto

Adobe InDesign
Adobe Illustrator

mechanical

Design for Manufacturing (DFM)

SolidWorks
AutoDesk Inventor
Rhino
Keyshot

development

Java (Android)
C
REST, Graph API

EDUCATION

BACHELOR OF APPLIED SCIENCE
HONOURS MECHATRONICS ENGINEERING (CO-OP)

University of Waterloo
Sept 2010 - June 2015

HOBBIES + INTERESTS

EXPERIENCE

HEAD PRODUCT UX DESIGNER + MOBILE LEAD
Nanoleaf | Toronto, Ontario + Shenzhen, China | Feb 2017 - Present

ANDROID DEVELOPER
Wattpad | Toronto, Ontario | Sept 2014 - Dec 2014

SOFTWARE ENGINEER INTERN (ANDROID)
if(we) - formerly Tagged | San Francisco, California | Sept 2013 - Dec 2013

MOBILE PAYMENTS SOFTWARE ENGINEER INTERN
Visa Inc. | Foster City, California | Jan 2013 - Apr 2013

JR. PRODUCT MANAGER / UX DESIGNER
Communitech | Kitchener, Ontario | May 2012 - Aug 2012

AGILE DEVELOPER
points.com | Toronto, Ontario | Aug 2011 - Dec 2011

...and this is some of my work

Nanoleaf Mobile App

An exercise in 3D-printing and entrepreneurship

Lära

A personal study on using bent lamination technique

ANNEX.

Monitor your garage - anytime, anywhere

tag'd

A portable laser tag system with a textile twist.

Nanoleaf Mobile App

Bringing “A Brand New Lighting Experience”
to the Nanoleaf Light Panels’ companion app

Overview

Nanoleaf Light Panels are modular IoT LED tiles whose companion app gives users the control to customize their Light Panels into their own stunning light art.

Problem

The hardware is beautifully designed but customers and reviewers couldn’t say the same for the app. It was clunky, confusing and not very useful.

Role

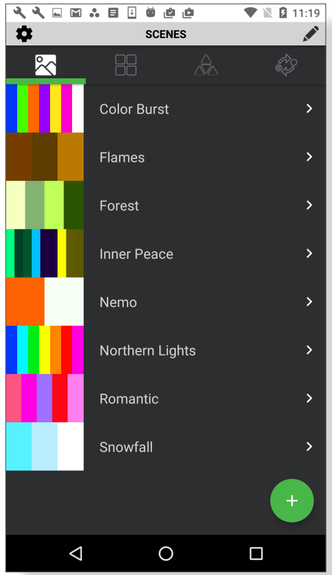
I was brought on board to redesign the mobile app and bring some of the same finesse from the hardware into the app’s user experience.

In addition to the UX design, I was also took on technical duties as the Android Lead, bringing development in-house and acquiring full ownership of the mobile app.

The original app comprised of four pages:

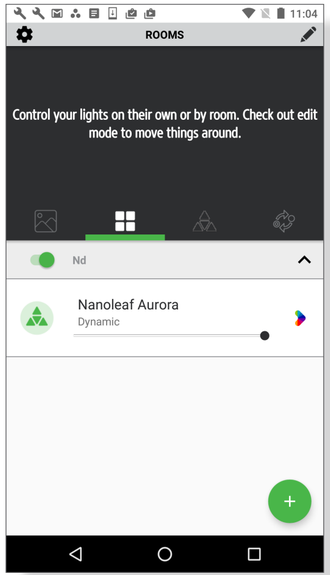
1.

Lighting animations (aka Scenes) saved on the Light Panels, users can trigger previously saved Scenes by tapping on it.



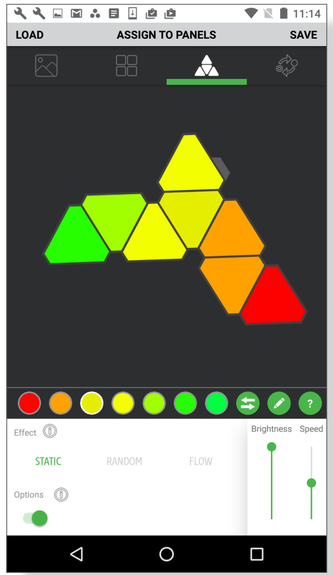
2.

Users can group devices into rooms and turn devices on/off by rooms, and adjust brightness.



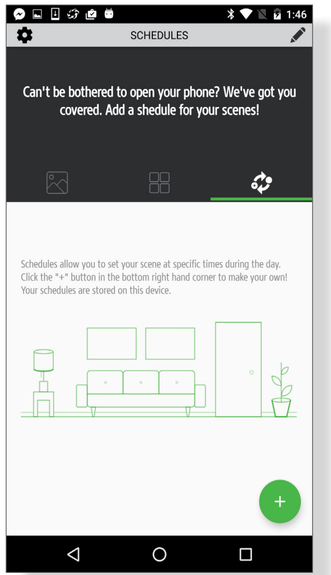
3.

A customization interface meant for creating and editing Scenes.



4.

An automation page where users can schedule when to trigger Scenes or “light alarms”.



I analyzed early user satisfaction surveys and reviews came away with three takeaways:

- The app was confusing
- The app wasn’t useful
- Users would rather use physical controls than the app

Most Nanoleaf users did not see any added value to using the app and that reflected heavily in the app ratings.

Design Process

From the team's brainstorming session, objectives were made to help narrow the focus and inform the redesign motivation for the app.

For the app to be successful, it must:

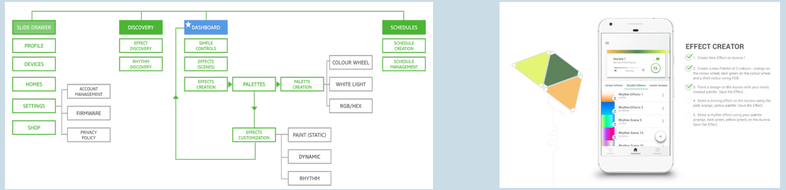
Prioritize Quick Control
Give users easy access to essential functions

Engage
Create a marketplace to share and download Scenes, increasing user investment and perceived value in both the product and app.

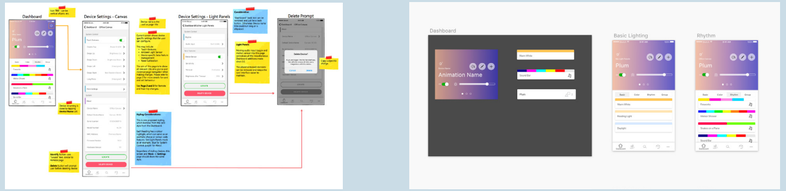
Educate
Inform users of new and existing features, upcoming products and exciting developments

Research + Brainstorming

Ideation + Testing



Analysis + Refinement



The Deliverable

Within 6 months, the app had undergone a complete overhaul, 2 rounds of user interviews and a month-long beta before being released to the public.

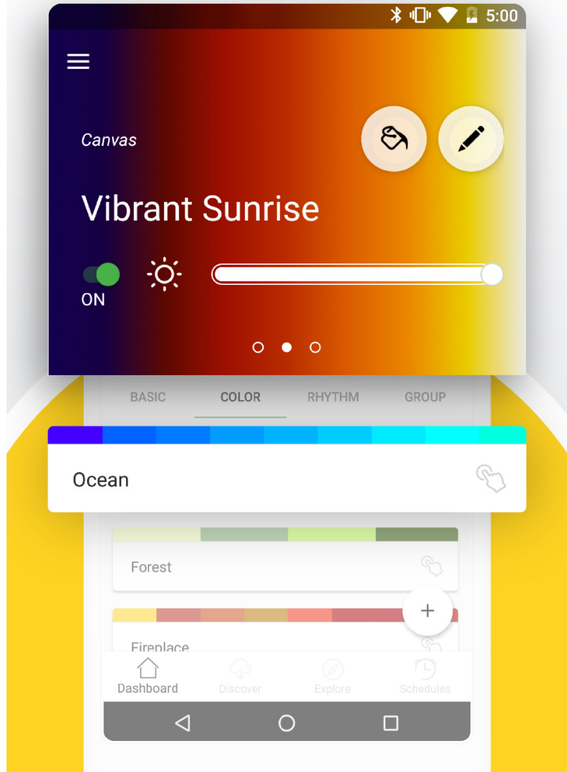
One-Touch Control

Dashboard

Quick Control

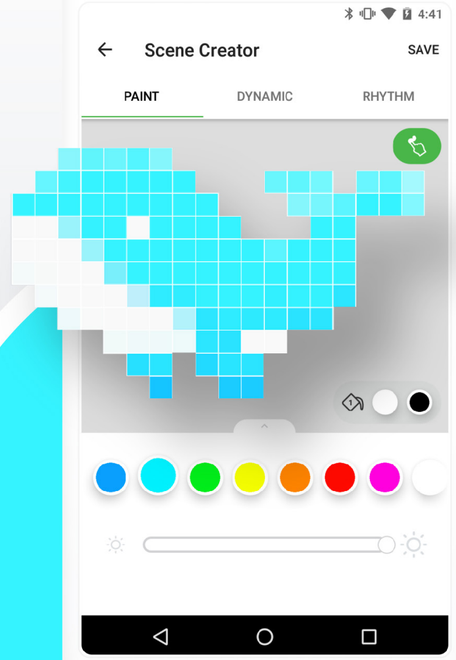
For the redesign, the priority was to provide a usable and intuitive interface.

The newly redesigned app features a dashboard giving users access to their device in just one touch.



Make it Yours

Scene Creator



Setting up to...

In order to engage our users and foster a sharing community, it was imperative to educate our users of the Scene structure.

This was accomplished by placing the custvomization interface one level down, only accessible if users edit or create a Scene. Navigating away from the page prompted a save dialog, encouraging users to view any changes to be saved as “Scenes”.

This then fed into our community-driven Scene share feature we dubbed “Discover”.

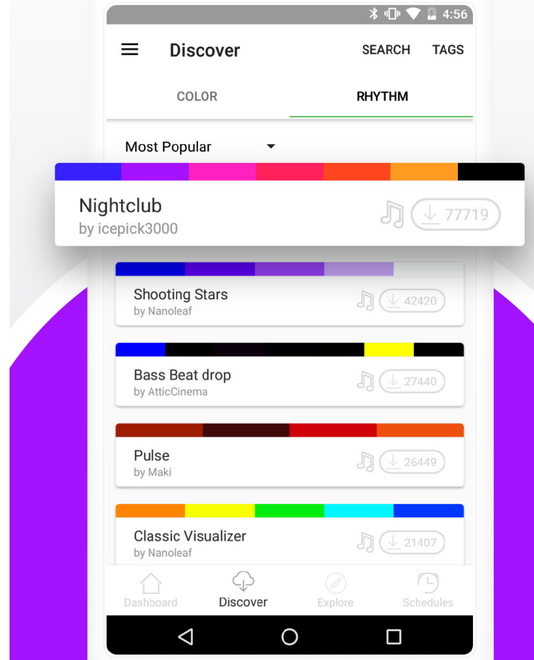
Share or Download Scenes

Discover

Engage

With less than 10% of users creating Scenes, most Light Panels users were stuck with the defaults on their device.

In order to keep things fresh, “Discover” offers user uploaded Scenes, brand new lighting Motions from Nanoleaf and independent developers.



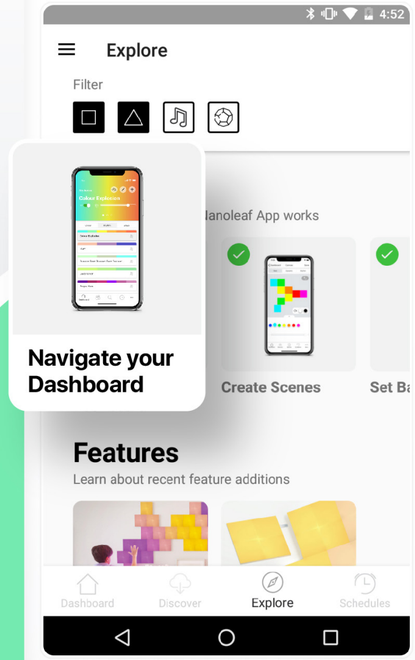
Learn New Tricks

Explore

Educate

Many users are unaware of the many features and third-party service integration such as Google Assistant, Amazon Alexa or Siri available on their Light Panels.

To remedy this, a central hub of tutorials and information are available to the user. The page is full of consumable tidbits, organized so users can explore their product at their own pace.



Results

Since the release of the new app, app ratings on both iOS and Android have seen a significant rise.

The app rating on Android had gone from 2.8 to 3.8, iOS from 3.0 to 4.5.

The Nanoleaf app is now the highest-rated OEM smart lighting app, overtaking major competitors like Philips Hue and LIFX.

Feel free to check out the app available in the Google Play Store or the App Store.

GET IT ON Google Play

Download on the App Store

Lära

A current work in progress to learn more about bent lamination

The name comes from the Swedish verb **lära sig** which means to learn or to study.

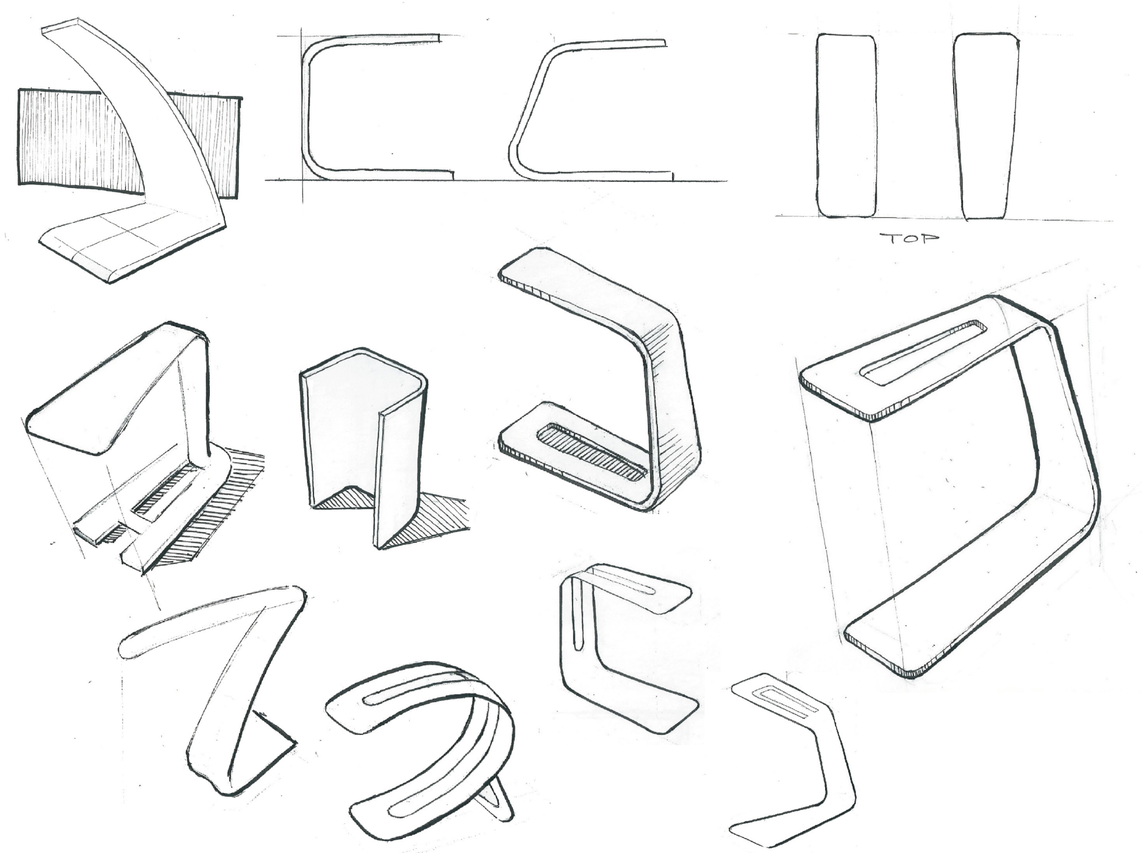
I have always been interested in Lighting and Furniture Design and I wanted to try a more contemporary woodworking technique.

This is a current work-in-progress in designing and building my own desk lamp.

When I think of bent lamination, the POÄNG armchair by IKEA comes to mind.

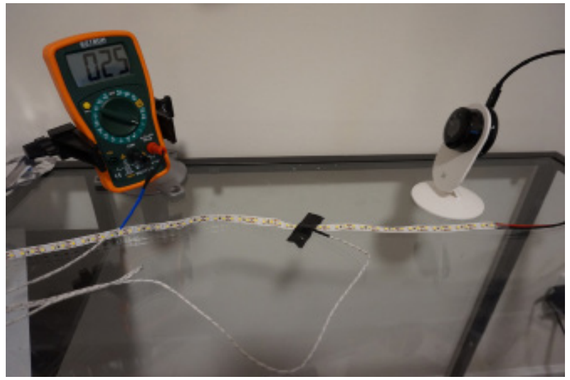
My parents had built a pair of these chairs when they first met and still enjoy lounging in them to this very day.

I knew I wanted to pursue a unibody construction that looked clean, elegant and inspired by Scandinavian design.



After some quick sketching, I settled on a design that I dubbed the armrest

Once all the electronic components were acquired, I added some small additons for additional circuit protection.

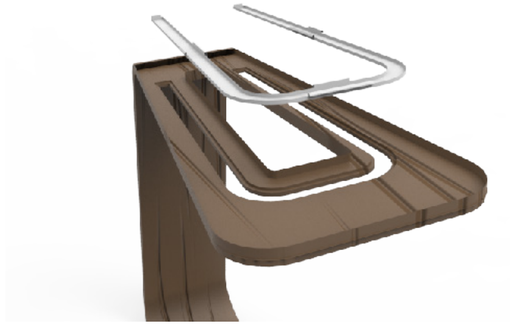


A 24-hour test run was done to find expected operating temperature and to determine if I need to make additional changes to deal with the heat output.

The body is constructed in two parts.

A slot has to be routed out to run the wiring up the body.

The inner half will then be glued to enclose the wiring.



The recessed cavity in where the LED strip sits will also be routed out. This include a ledge for the plastic diffuser to snap into.

The diffuser for the lamp be 3-D printed, likely sanded and epoxied for a polished finish.

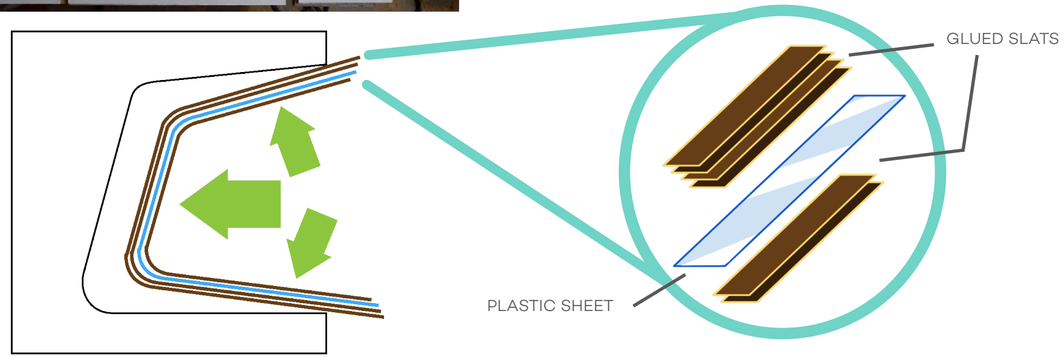
Before ripping any lumber into thin slats, I needed a zero clearance insert for my table saw.

This will prevent any tearout when ripping wood slats for lamination.

Currently, I am working on the bending form - I saved both portions in case I want a two-part bending form.

The glued slats will be separated by a plastic sheet to form the inner and outer half for construction.

The project is still a **work in progress**.



ANNEX.

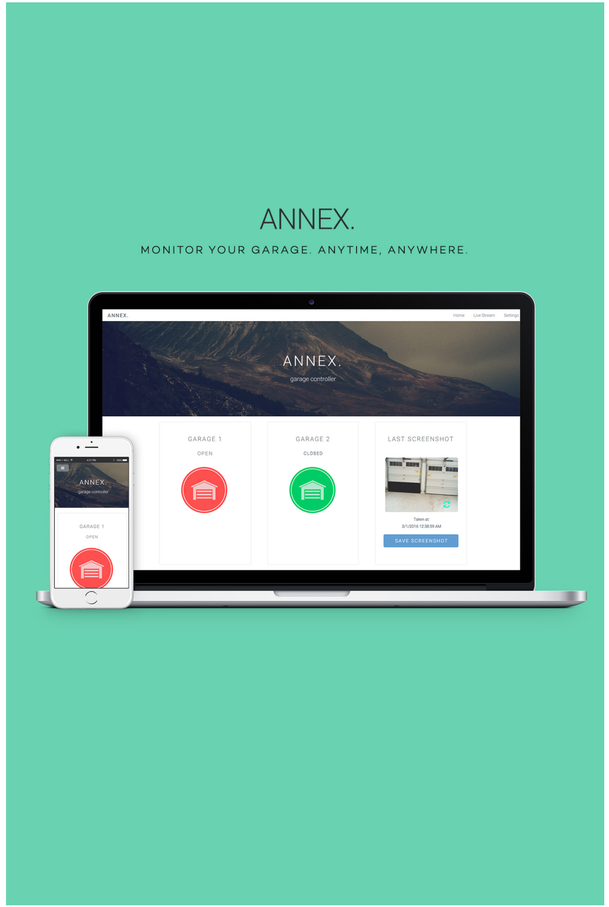
An open-sourced Arduino garage monitor

Left home and not sure if you've left your garage open? With ANNEX, you can monitor your garage - anytime, anywhere.

Version 2 is currently in the works to improve security through PIN verification and will include the addition of text notifications.

Visit the link below for the Instructables **community featured** tutorial!

www.instructables.com/id/Annex-an-Arduino-Yun-Garage-Monitor/



My parents often leave the house only to pull back into their driveway to check if they left their garage open.

I wanted to create a solution for my parents to monitor and control their garage wherever they are, on any device.

Until they got smartphones a few year ago, my parents had never been on the Internet before. As such, I had to make sure that what I build will not overwhelm them.

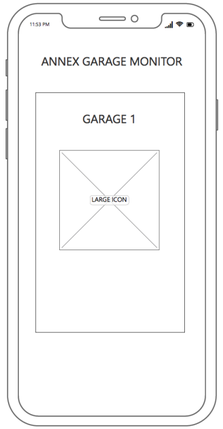
The system had to prioritize the following:

Single Page Portal
All essential functions can be easily accessed.

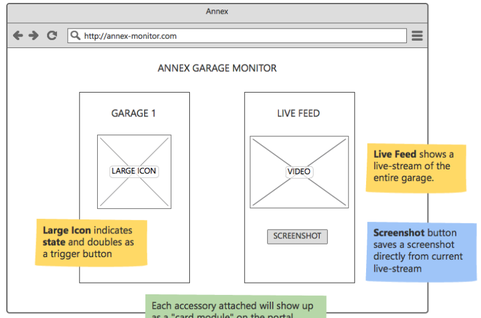
Accessible
Portal can be accessed when away from the home network and from any platform.

No Hassle
Set up once and forget. System should have built-in recovery if anything goes wrong.

Prior to building out the portal, I put together some quick mocks to demonstrate the intended responsive behaviour across mobile and desktop.



Portal is responsive, will show only one "card module" at a time



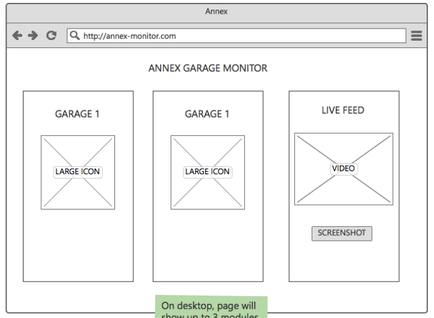
Large Icon indicates **state** and doubles as a trigger button

Live Feed shows a live-stream of the entire garage.

Screenshot button saves a screenshot directly from current live-stream

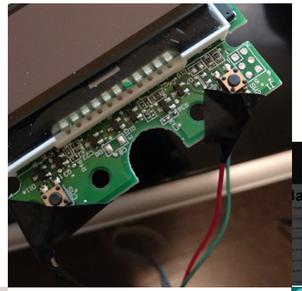
Each accessory attached will show up as a "card module" on the portal.

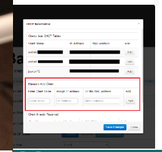
The two shown in mocks are:
- Garage Control module
- Camera module

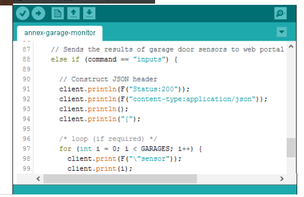


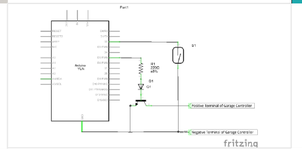
On desktop, page will show up to 3 modules per row.

Testing and diverting garage control to Annex



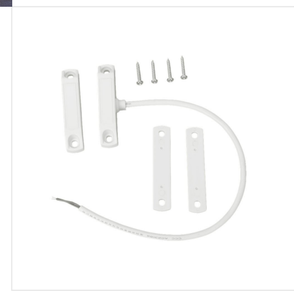






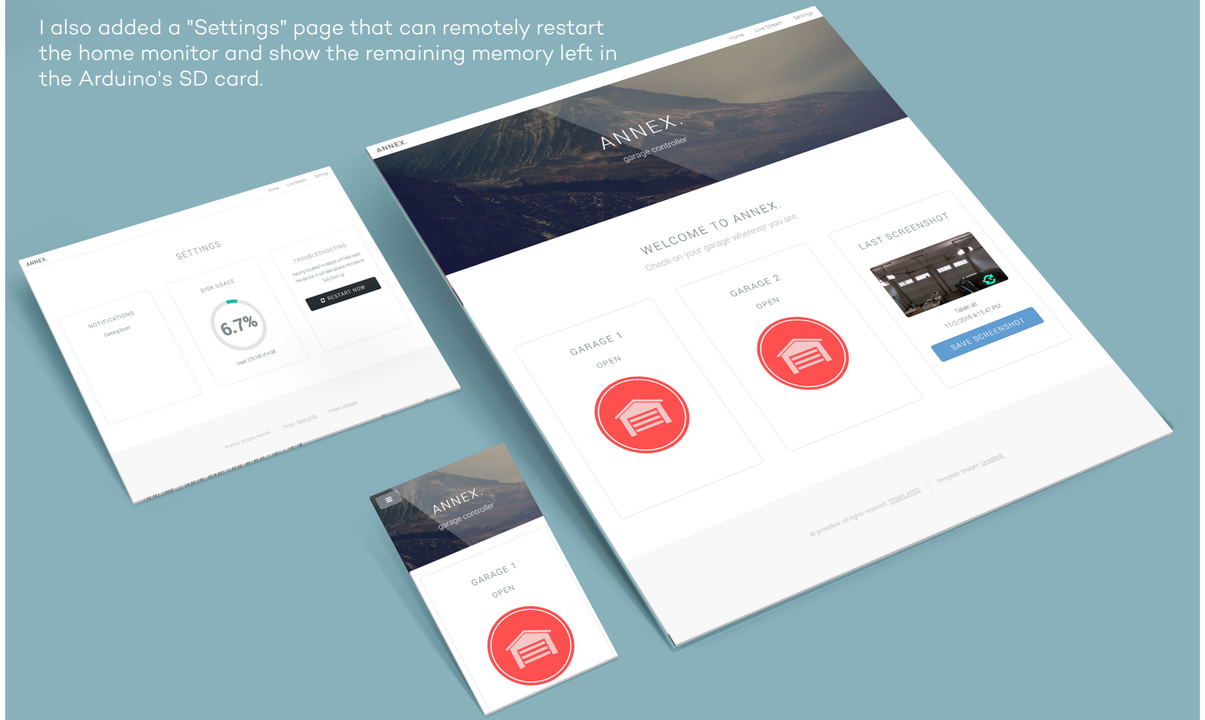
Coding embedded and server side on Arduino Yun

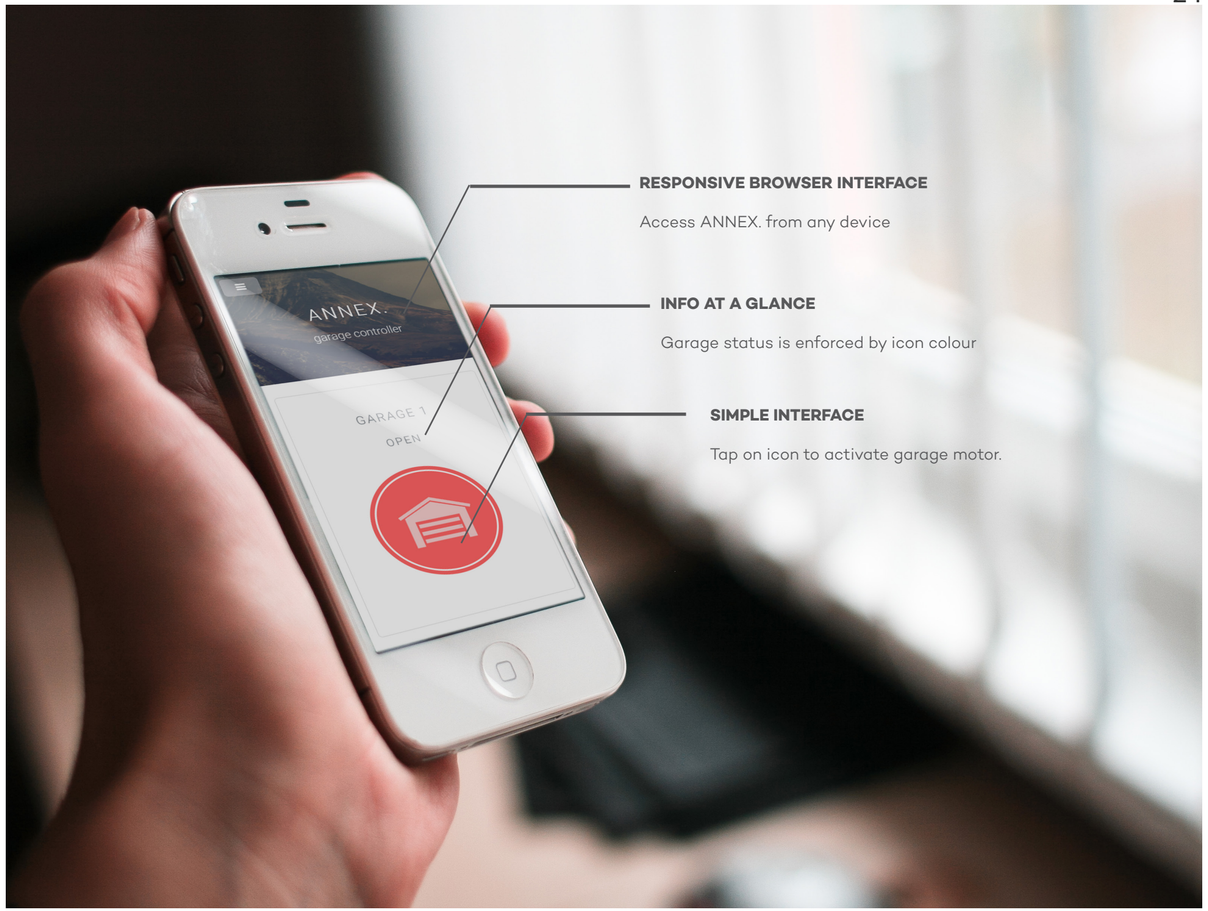
Magnetic window latch used in home security are mounted to garage doors



After figuring out some port forwarding and DNS magic, the portal is accessible through a human-friendly hostname.

I also added a "Settings" page that can remotely restart the home monitor and show the remaining memory left in the Arduino's SD card.





tag'd

A portable laser tag system designed with a textile twist

Initially developed for combat training, laser tag has long been limited to the indoor arena experience. Its equipment is bulky and heavy, detracting from the overall gameplay experience.

tag'd aims to redesign and bring the key elements of laser tag to players everywhere.

I was the Hardware Lead and Lead Designer; I was responsible for the R&D, construction and software integration with custom sensors in our play vest and "shooter" glove combo.

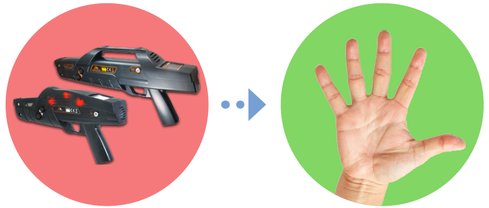
This project was the culmination of Waterloo Engineering Capstone Project and was showcased at the **ECE Design Symposium 2015**.

Image provided by Laser-Tron

"It'd be nice to bring back the **nostalgia** of running around."

"I'm uncomfortable when I see kids running with shooters **resembling firearms**."

"We want something **convenient** and **easy** to **set up**."

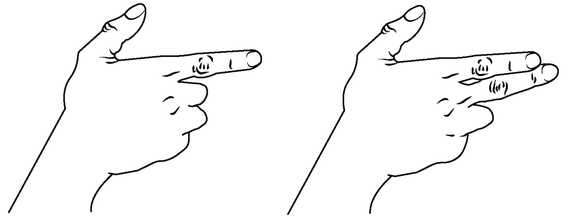


In place of the typical bulky shooter, tag'd uses a glove that detects a "trigger" action to shoot off a laser pulse.

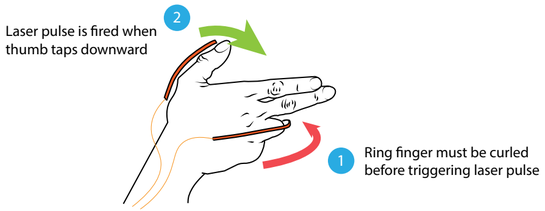
The first couple designs looked at flex and pressure sensors. They can be easily embedded into textiles, making them ideal for the application.

Unfortunately, preliminary testing proved response time was a debilitating issue.

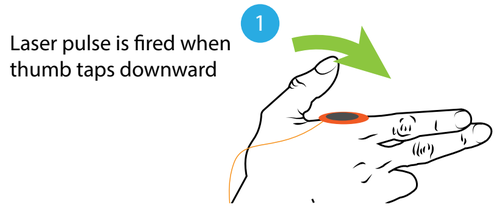
ONE-HANDED SHOOTING GESTURES



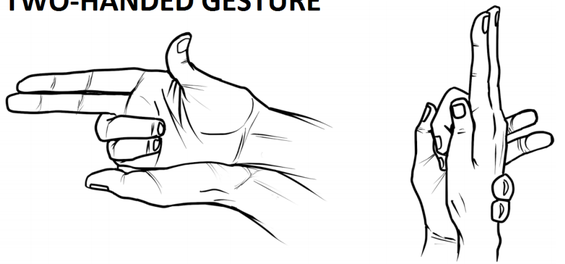
FLEX SENSORS



PRESSURE SENSOR



TWO-HANDED GESTURE

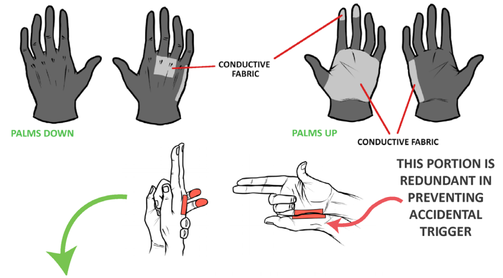


After some further brainstorming, the team explored the idea of a two-handed gesture. For those who wanted stability when aiming, it was natural to gravitate to a two-handed pose.

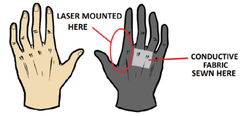
While experimenting on a "complete-the-circuit" solution, a happy accident revealed that conductive fabric works great as a **textile capacitive sensor**.

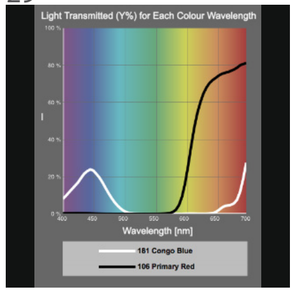
ITERATION 2 - CONDUCTIVE FABRIC

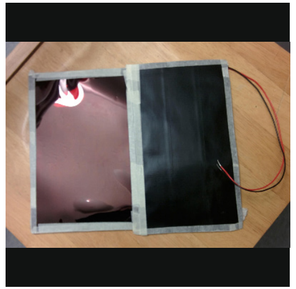
ORIGINAL DESIGN - "COMPLETE-THE-CIRCUIT"

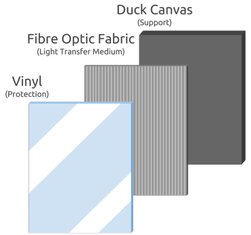


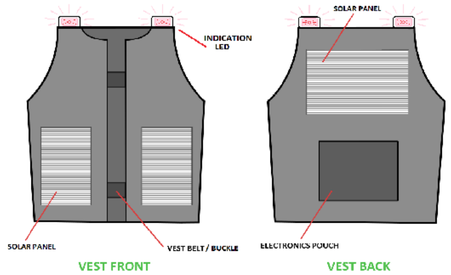
REDESIGN - TEXTILE CAPACITIVE SENSOR











The majority of R&D went into developing an **all-textile** sensor patch.

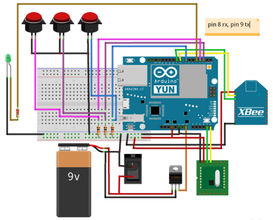
The team tested a number of materials including: flexible solar panels, reflective fabrics and light filters.

After months of testing, the team developed a sensor patch using **fibre optic fabric**.

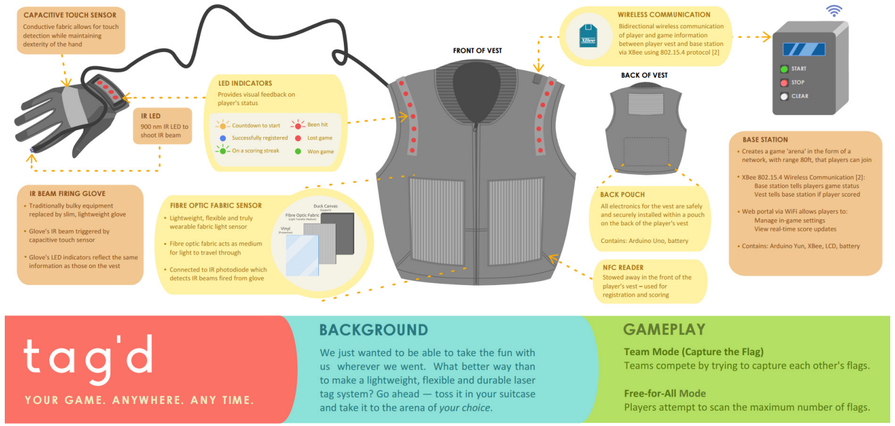
Each individual vest has a dedicated electronics pouch that handles all the processing, communication with the base station and a battery to provide hours of endless gameplay.

The base station is the heart of tag'd.

From any Wifi-enabled device, users can configure the gameplay (Capture the Flag or Free-For-All), view score breakdowns and manage other settings.



Paired with our project poster, the team successfully presented at the Symposium and brought our Capstone project to a close.



tag'd

YOUR GAME. ANYWHERE. ANY TIME.

BACKGROUND

We just wanted to be able to take the fun with us wherever we went. What better way than to make a lightweight, flexible and durable laser tag system? Go ahead — toss it in your suitcase and take it to the arena of *your choice*.

GAMEPLAY

Team Mode (Capture the Flag)
Teams compete by trying to capture each other's flags.

Free-for-All Mode
Players attempt to scan the maximum number of flags.

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www.jennellew.com
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