

# Missile Commands

**ANICOL**  
**CONFETTI**

photo of the  
launcher

# todos

▼ *What needs to be done?*

- finish presentation
- start a meetup
- day job work

1 item left

All   Active   Completed   Clear completed

Double-click to edit a todo

Created by petehunt

Part of TodoMVC

# Hi I'm Francis

NO FOOD  
TODAY!!

Jollout's  
LUKA LA  
Adventure Time's  
**BACON PANCAKES**  
Warframe's  
**GREEDY MILK**

FOOD SERVED:

1-3PM FRIDAY & SATURDAY

@reconbot





1  
bocoup

# Johnny-Five.io



*J5 makes hardware  
development as easy  
as web development*

– Probably Rick Waldron



**Paul Ford**  
@ftrain



Following

after 20 years of being told that web  
programmers aren't real programmers it's  
weird to learn that code in cars is garbage

RETWEETS

527

LIKES

597



1:19 PM - 30 Nov 2015

Brooklyn, NY



...



Reply to @ftrain



**Paul Ford** @ftrain · Nov 30

i just assumed it was all formally-verified Ada done to the highest standards with  
unbelievably high testing standards



61



122

...

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**Paul Ford** @ftrain · Nov 30

i'm sitting here like an ass using immutable data structures and reading about  
TLA+ and people at Toyota are like `#define MAKE_CAR_GO 1`



353



516

...

[View other replies](#)



**Francis Gulotta** @reconbot · Nov 30

@ftrain this is pretty much why I started @bocoup's web connected devices



3

...



**Paul Ford**  
@ftrain



Following

i'm sitting here like an ass using immutable  
data structures and reading about TLA+ and  
people at Toyota are like `#define`  
`MAKE_CAR_GO 1`

RETWEETS

**353**

LIKES

**516**

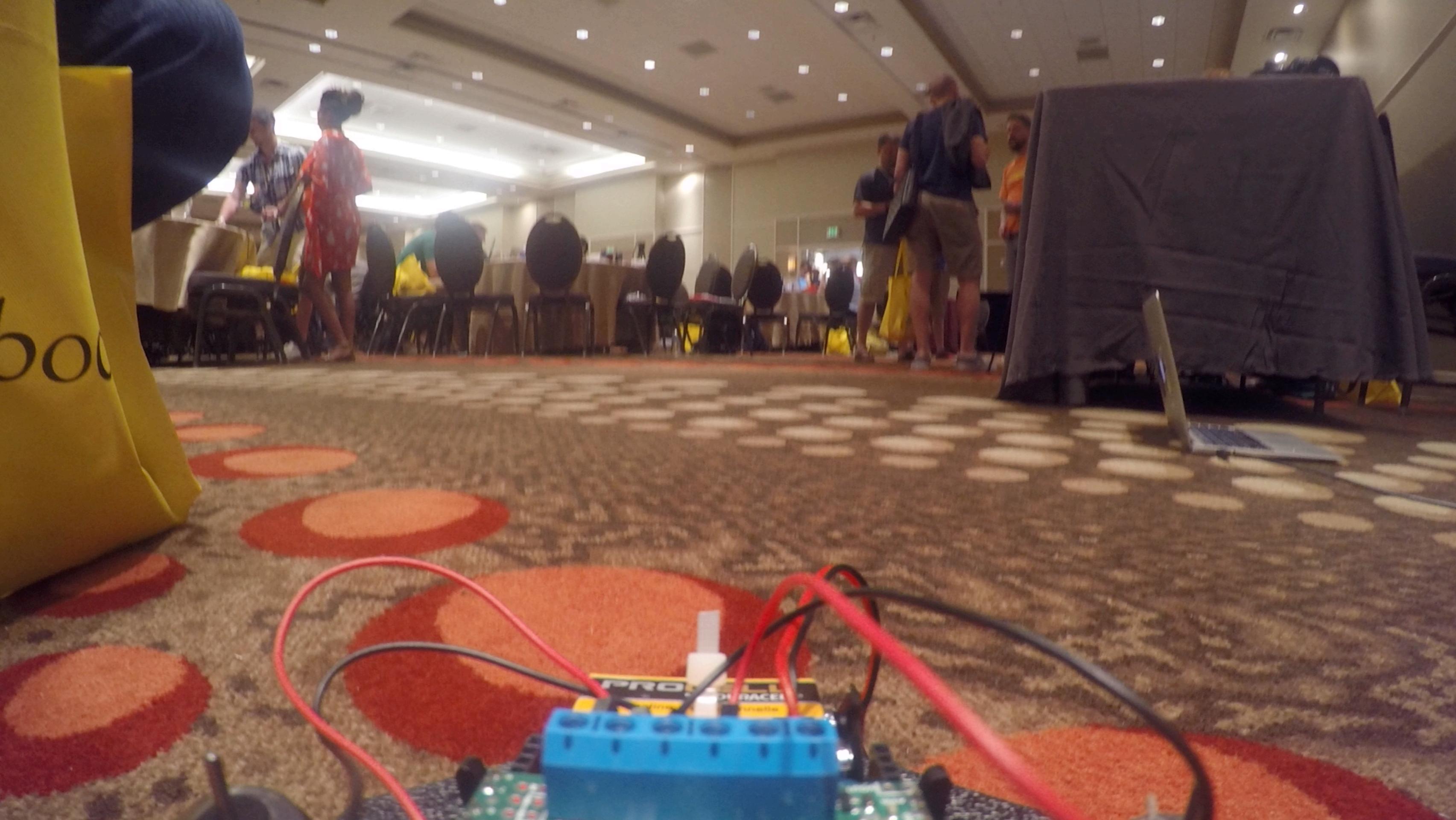


1:23 PM - 30 Nov 2015

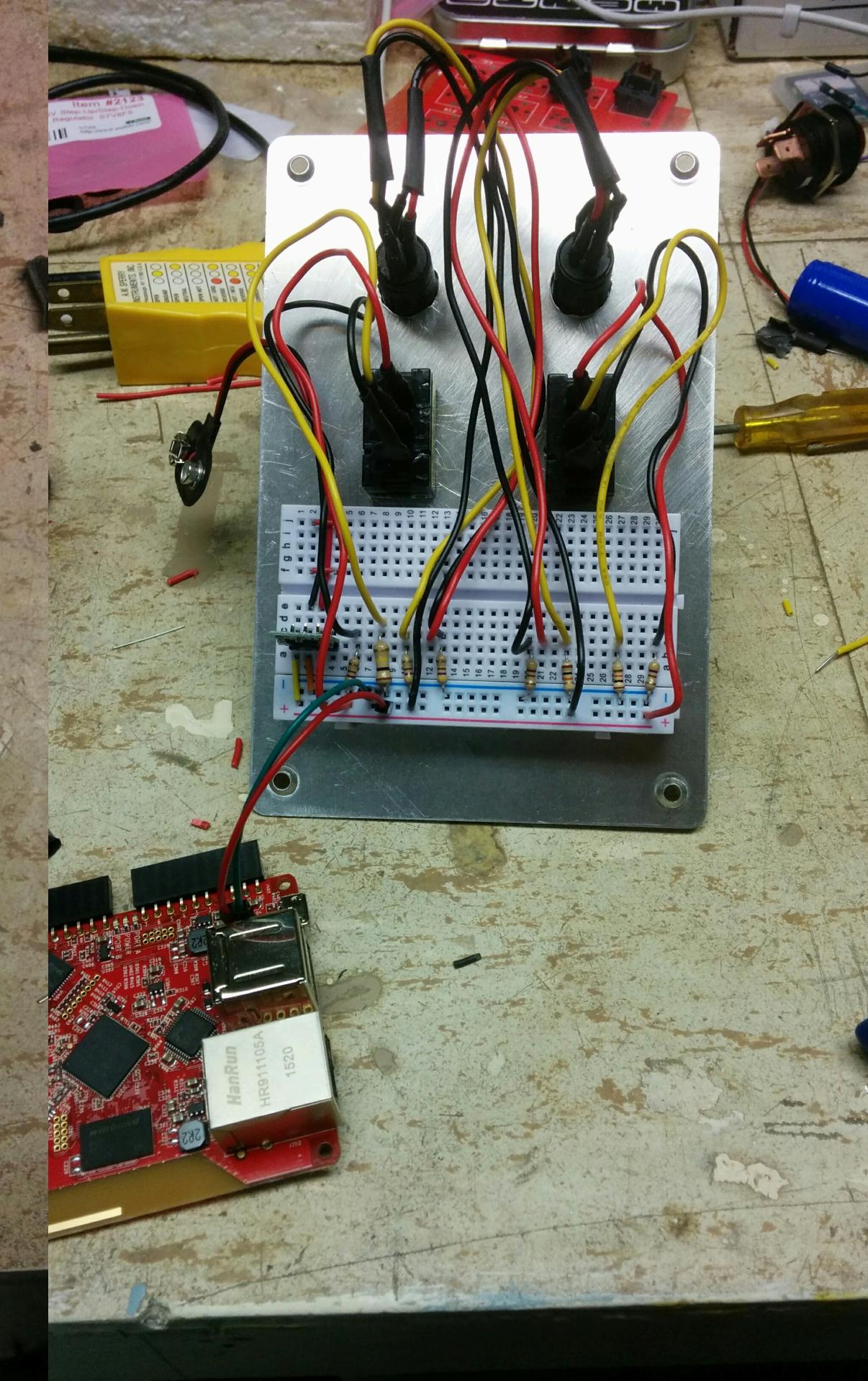
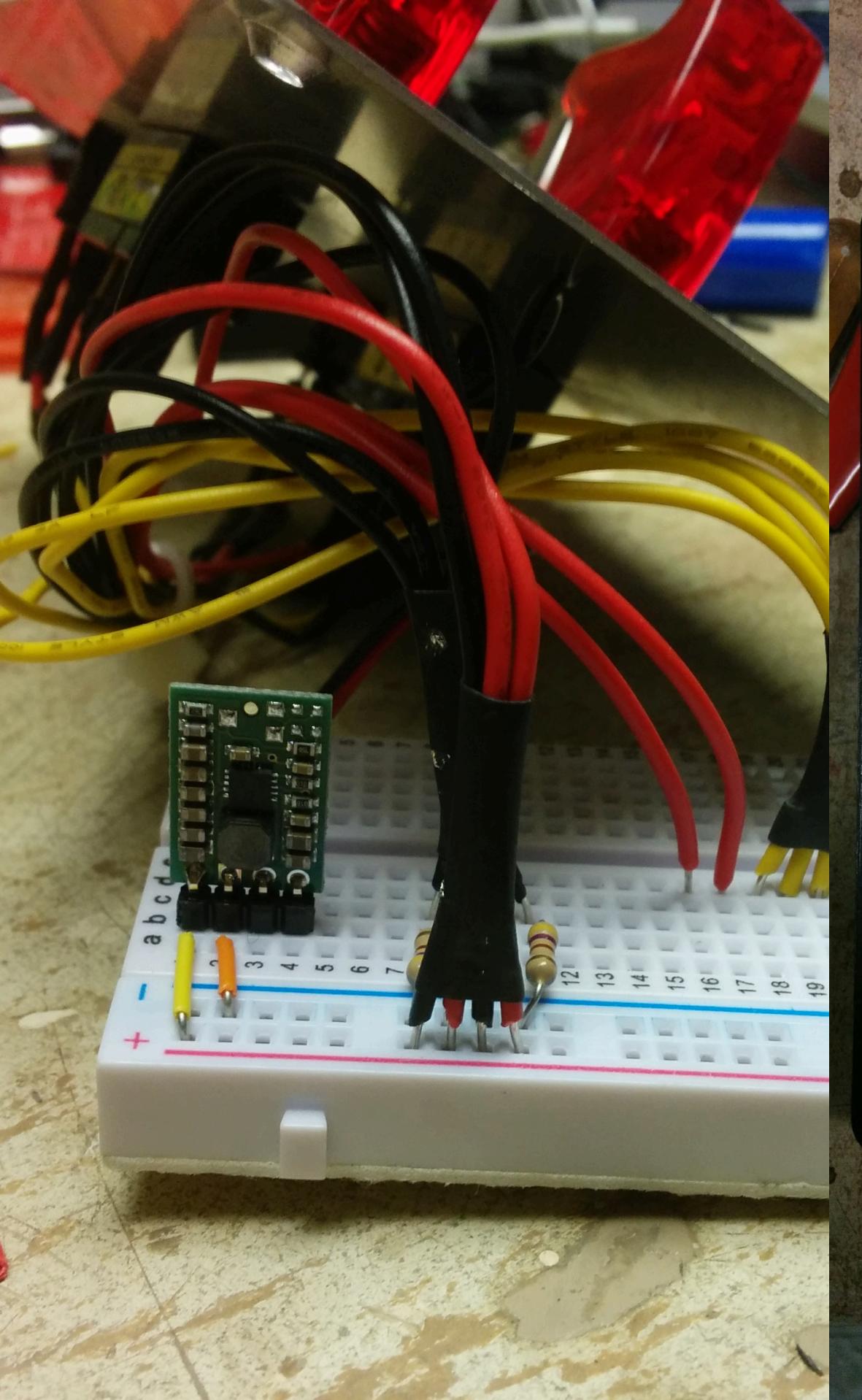
📍 Brooklyn, NY



...



# Hardware Preview



Redux

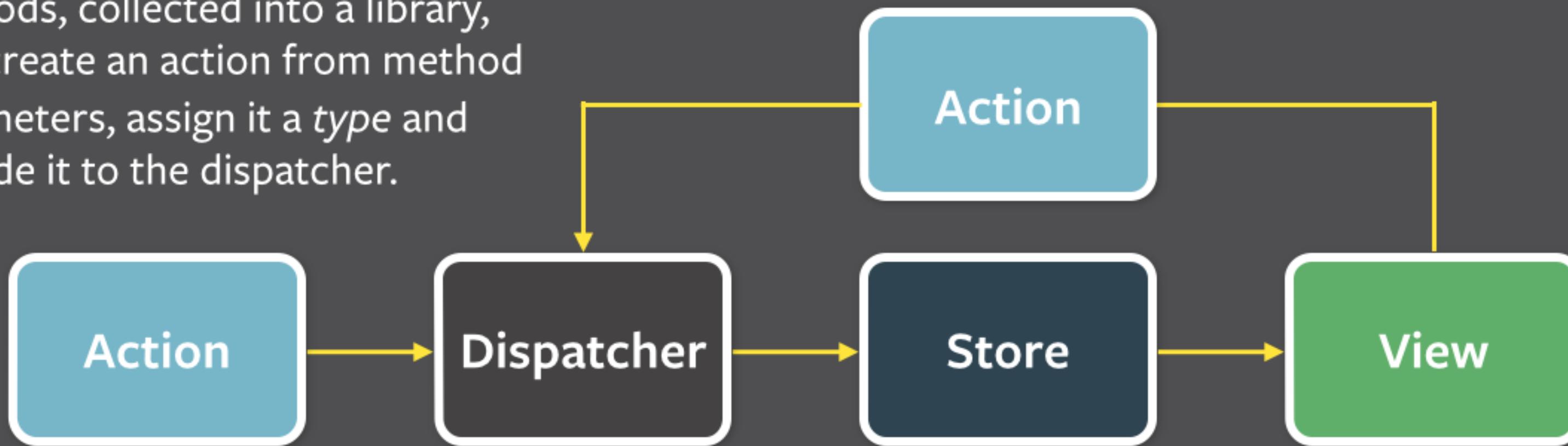
# Redux

The predictable state container for  
JavaScript apps

# Redux

The *immutable* state container for  
JavaScript apps

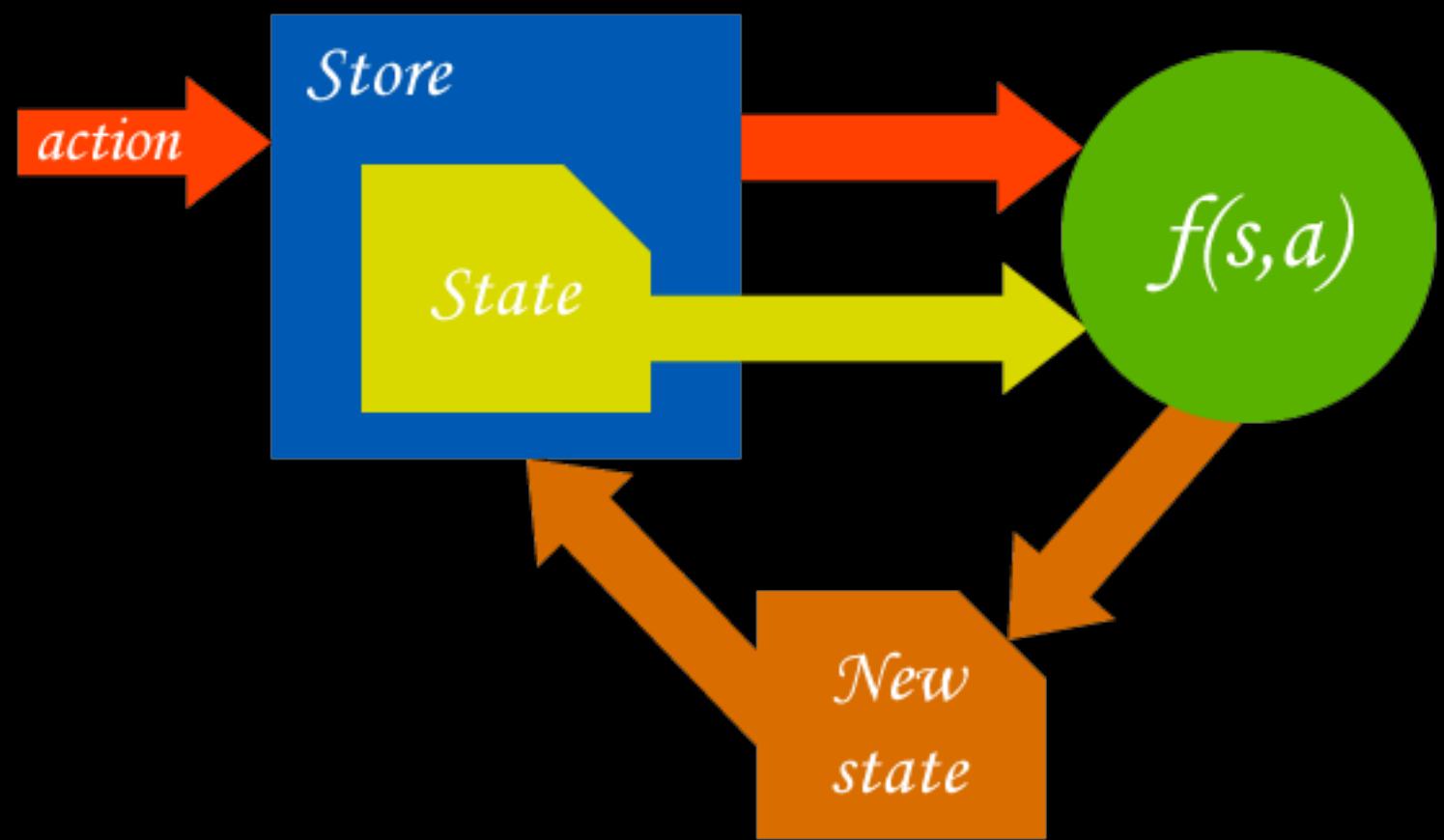
Action creators are helper methods, collected into a library, that create an action from method parameters, assign it a *type* and provide it to the dispatcher.



Every action is sent to all stores via the *callbacks* the stores register with the dispatcher.

After stores update themselves in response to an action, they emit a *change* event. Special views called *controller-views*, listen for *change* events, retrieve the new data from the stores and provide the new data to the entire tree of their child views.

Whatever



# Redux

```
let state = { mode: 'resting' };
let action = { type: 'launch the missiles!' };
let newState = reduxMagic(state, action);
// { mode: 'launching missiles' }
```

```
// React Redux Example

import React, { Component, PropTypes } from 'react'
import { connect } from 'react-redux'
import * as actionCreators from '../actions'
import Armer from './armer';

const Launcher = React.createClass({
  render(){
    const { launch, arm, disarm, status} = this.props
    return (<div>
      <h1>Launcher is {status}</h1>
      <Armer {...{ status, arm, disarm }}/>
      <div>
        <button onClick={ launch }>Launch</button>
      </div>
    </div>);
  }
});

export default connect(state => state, actionCreators)(Launcher);
```

# Redux Demo

# Johnny-Five

JavaScript Robotics and IoT programming framework,  
developed at Bocoup.

# Johnny-Five

More than just a framework

# Johnny-Five

The Platform with APIs, JS Libraries, Philosophy,  
Hardware, community for robots and the IoT

# Johnny-Five

```
let button = new five.Button(2);

button.on("press", () => console.log("Button pressed") );
button.on("release", () => console.log("Button released") );
button.on("hold",   () => console.log("Button held") );
```

Hold event fires after  
1/2 Second or 500 Milliseconds

50 centiseconds

# Johnny-Five

```
let flipSwitch = new five.Switch( 8 );
let led = new five.Led( 13 );

flipSwitch.on( "open" , () => led.off() );
flipSwitch.on( "close" , () => led.on() );
```

# Johnny-Five-Redux

```
let actions = [  
  { type: 'button:press' },  
  { type: 'button:release' },  
  { type: 'button:hold' }  
];
```

# Johnny-Five Callbacks

```
var five = require('johnny-five');
var board = new five.Board();
board.on('ready', function(){
  var armer = new five.Switch(5);
  var launch = new five.Button(6);
  var launchLight = new five.Led(7);
  var launched = true;
  armer.on('close', function(){ launchLight.on(); });
  armer.on('open', function(){
    launchLight.off()
    launched = false;
  });
  launch.on('press', function(){
    if (armer.isClosed && !launched){
      launched = true;
      launchLight.off();
    }
  });
});
});
```

```
// dispatchEvent = ()=>{};  
  
board.on('ready', ()=>{  
    var button = new five.Button(4);  
    button.on('press', () => {  
        dispatchEvent({  
            type: 'button:press'  
        });  
    })  
});
```

.

```
// actionify.js

export default function(device, event, name, callback) {
  device.on(event, (data) => {
    callback({
      type: `${name}:${event}`,
      payload: data
    });
  });
}
```

```
import actionify from 'actionify';

// dispatchEvent = ()=>{};
var button = new five.Button(4);
actionify(button, 'press', 'launcher', dispatchEvent);

// {
//   type: 'launcher:press'
// }
```

```
import { combineReducers } from 'redux'
export default function status(state = 'rest', action){
  switch(action.type){
    case 'armer:closed':
      return (state === 'rest') ? 'armed' : state;
    case 'armer:open':
      return 'rest';
    case 'launcher:press':
      return (state === 'armed') ? 'launched' : state;
    default:
      return state;
  }
}
```

.

```
// j5-render.js  
export default function render(state){  
  switch(state){  
    case 'rest':  
      LaunchLight.off(); break;  
    case 'armed':  
      LaunchLight.on(); break;  
    case 'launched':  
      launch(); break;  
  }  
}  
.
```

**DEMO TIME**



Tessel 2 in  
January

NodeBots . NYC in  
January

Thanks to Polygon for the gifs

[http://www.polygon.com/features/2013/8/15/4528228/  
missile-command-dave-theurer](http://www.polygon.com/features/2013/8/15/4528228/missile-command-dave-theurer)

Thanks to Vernimark for the inside missile command  
images <http://www.vernimark.com/?p=1183>

Thanks to Paul Ford for being angry about cars

[https://twitter.com/ftrain/status/  
671393150628438016](https://twitter.com/ftrain/status/671393150628438016)

Thanks to Pololu for being awesome [https://  
www.pololu.com/product/2123](https://www.pololu.com/product/2123)