# PIRE Fellowship

MELISSA BICA

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Introduction

- PhD student in Computer Science at University of Colorado Boulder

  - Human-Centered Computing

  - Crisis Informatics

  - Front-end Development

- Research focus:

  - Image-based information diffusion and communication via social computing platforms in relation to disaster events

Project Overview & Goals

- Visual Social Media Mining, with mentor Dr. Kyoungsook Kim

- Interactive data visualization framework to enable finding patterns/relationships

- Potential users:

  - Academic researchers

  - Public health organizations (i.e. CDC)

- Goals:

  - Extend functionality of existing Sophy framework

  - Create multiple, interactive data visualizations

  - Represent geo-spatial, time, and topic data
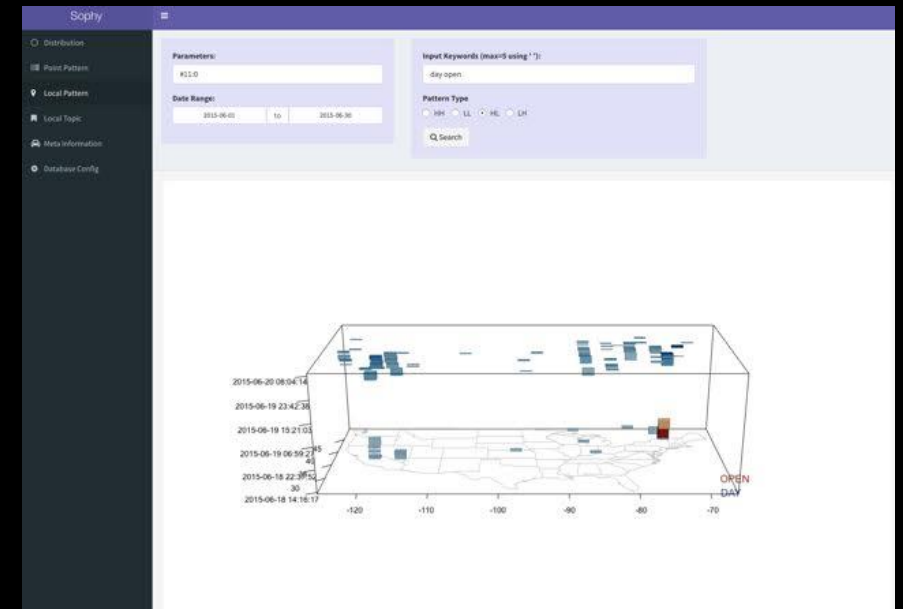
Progress

- *Rendezview*

- HTML/CSS/JS system

- Sidebar UI for selecting data

- 3D map & 2D inner map visualizations using Three.js, GeoJSON

- Word cloud using D3.js

- Sankey diagram using D3 plugin

```
{
    "@rid": "#15:0",
    "word": "DAY",
    "type": "HH",
    "lat": 33.825607416666664,
    "lon": -118.70952491666667,
    "st": "2015-06-18 14:16:17",
    "et": "2015-06-18 15:04:11",
    "value": 0.00009518089733927074,
    "geom": "POLYGON(( -119.589866 33.562628, -
        117.829184 33.562628, -117.829184 34.088587, -
        119.589866 34.088587, -119.589866 33.562628))",
    "tags": "GUSTAVOAOJ:1 RANA:1 CANTINA:1 ...",
},
```

Demo

- Code can be found at: https://github.com/melissab147/rendezview-ws
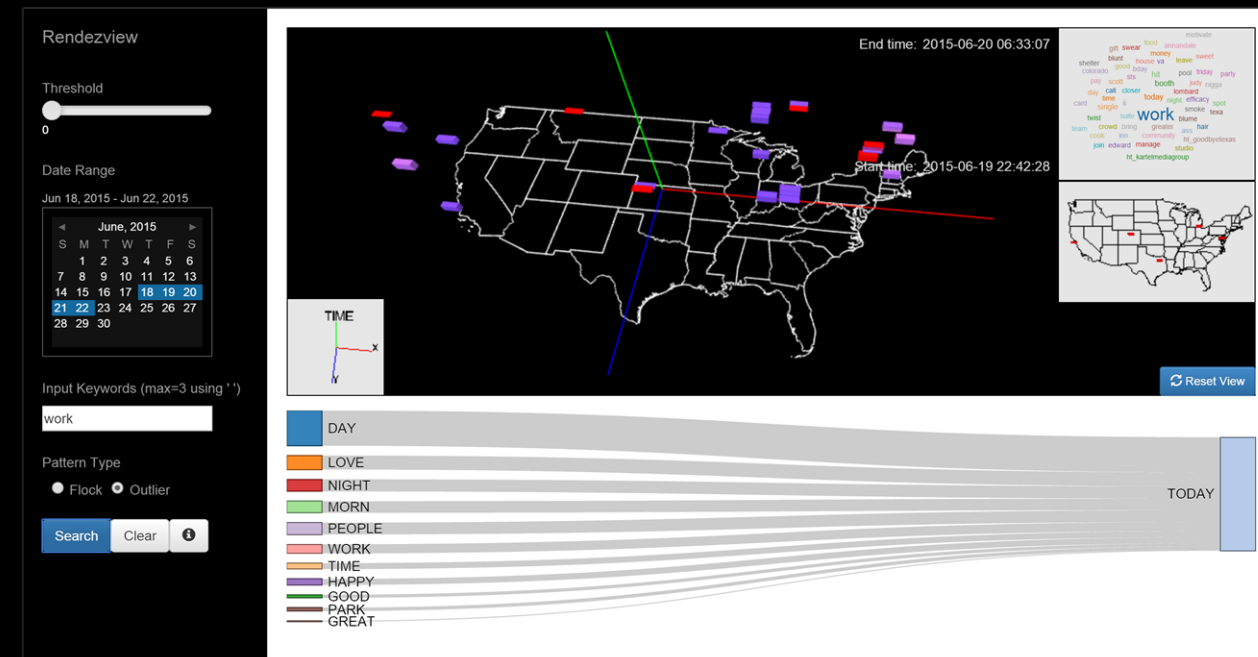
What's Next

- Connect to database

- Implement Sankey diagram functionality – interaction with 3D map

  - Allow user to choose aggregation type – sum, max/min, count, etc.

- Front-end performance improvements

- Submit poster to SC15

Summary

- Value of Rendezview
  - Allows users to find many patterns and relationships in their data
  - Visualizations are clearer and easier to understand compared to complex databases

- What I've learned:
  - Javascript – libraries and APIs
  - Data visualizations – 2D, 3D, interactive
  - Front-end performance & web development – task runners, minification, etc.
  - HTTP requests – communicating between client and server

Asakusa

Kyoto

Yamanashi

Ueno

Tokyo

Arashiyama

Lake Kawaguchiko

Gyeongbokgung Palace, Korea