PIRE Fellowship

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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

```json
{
"@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": 0.0009518089733927074,
"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