Outline

- Problem/Motivation
- Tech Stack
- Approach
- Features
- Timeline
- Demo
- Acknowledgments
- References
Problem/Motivation

- Lack of comprehensive digital libraries for mass shootings in United States
- Visualize and compare different events
- As the problem has grown in recent times tools are needed to archive and display severity of the problem.
Tech Stack

Backend
- Flask: API routes
- MongoDB:

Authentication
- Firebase

Frontend
- Next.js
- React.js
- Typescript
- MUI
Approach

- **System Requirements**
  - Represent shooting event as objects with fields
  - Collect urls of sources
  - Ability to add/delete events
Features

- Map Visualization
- Timeline
- Comparisons
- Admin Page/Authentication
- Search Capability
Searching Feature

- Users can search for a name of a shooting event
- Advanced search allows searching based on date or location
Map Visualization

- Leaflet + OpenStreetMap
- GeoPy
  - Resolve location from given string of city
- Clickable Events
  - Each label routes user to Event Details page

**Virginia Tech School Shooting**

- **Date:** 2007-04-16
- **Perpetrator:** Seung-Hui Cho
- **Location:** Blacksburg, VA
- **Place:** N/A
- **Number of Victims:** 0
- **Summary:** Seung-Hui Cho shot and killed 33 individuals including students and professors making it the most severe school shooting of all time
- **Motive:** Suspected retaliation against bullying.
Timeline

- Show shooting events in chronological order
- Used react VerticalTimeline
- Timeline required own page due to size
Comparisons

- Interact with event data
- Compare 2 events that can be selected on the right
- Compare relevant data
  - Name, Date, Location, etc
Admin Page/Authentication

- Admin functionality using Google Firebase authentication
- Collect and submit data of shooting events
- Supports login/logout and custom navigation
Demonstration

Mass Shooting Webpage
Milestones Completed

9/14
Setup
Set up repo on GitLab, System design, wireframe

9/28
Prototype
Prototype of pymongo and python api, setup MongoDB cluster.

10/15
Testing
Frontend of webpage up and working with hardcoded event objects

10/30
Integration
Integration of backend: persisting, and frontend visualization.

11/14
Final Product
Deploy to production, Final Presentation and report due
Acknowledgments

Dr. Farag
Email: mmagdy@vt.edu
References

https://www.mongodb.com/docs/manual/indexes/


https://leafletjs.com/reference.html

https://firebase.google.com/docs/auth

https://github.com/prabhuignoto/react-chrono
Questions?