DSCI 551 Project Proposal

1. Team Member:

Zihan Liu zliu2193@usc.edu USC ID: 1534981630
Shuchan Zhou zhoushuc@usc.edu USC ID: 9442515557
Zeyu Li zli86605@usc.edu USCID: 8454499854

2. Project Topic: Social Media platform for USC students based on Django

Description:
We are going to build a social media platform related to sports for USC students, the platform will list some posts from different USC sports clubs. Students can search for information about the events they are interested in by entering the related keywords such as the time and location of events. They can also make some posts and comment on others' posts on the platform.

3. Planned Implementation:

1) Use Python to scrap posts on some Instagram accounts related to USC recreational sports clubs. (e.g, #trojantennisclu, #trojandanceforce)
2) Do data preprocessing such as data cleaning, and setting data format
3) Import the dataset to MongoDB
4) Implement a way for users to create accounts and log in to our web app (such as email/password authentication). It could be realized using OAuth, or JSON Web Tokens (JWTs).
5) Build a RESTful server that can accept and process requests sent from users, communicate with the database, and serve the web pages. (using Django as the frame)
6) Creating a user interface to realize the functions of posting, modifying posts, and viewing other people's posts. The web interface is served for users to interact with our web app, which will be built using HTML, CSS, and JavaScript.
7) Real-time update database using WebSockets. For our web app, there will be updates in the database when users have new posts, new likes, and new comments.

4. Timeline (when to finish which items):

<table>
<tr><th>Date</th><th>Backend</th><th>Frontend</th></tr>
<tr><td>Week 1 (2.12 - 2.18)</td><td>Scrape data from Instagram</td><td rowspan="2">Design and build the graphical interface</td></tr>
<tr><td>Week 2 (2.19 - 2.25)</td><td>Data cleaning and import into MongoDB</td></tr>
<tr><td>Week 3 (2.26 - 3.4)</td><td>Implement WebSocket server</td><td>Implement client-side validation</td></tr>
<tr><td>Week 4 (3.5 - 3.11)</td><td rowspan="2">Add RESTful API</td><td>Implement frontend routing</td></tr>
<tr><td>Week 5 (3.12 - 3.18)</td><td>Implement user authentication</td></tr>
<tr><td>Week 6 (3.19 - 3.25)</td><td colspan="2" rowspan="2">Realize the interaction between frontend and backend
(including requests sending and response, real-time updates)</td></tr>
<tr><td>Week 7 (3.26 - 4.1)</td></tr>
<tr><td>Week 8 (4.2 - 4.8)</td><td colspan="2" rowspan="2">Test and debug</td></tr>
<tr><td>Week 9 (4.9 - 4.15)</td></tr>
<tr><td>Week 10 (4.16 - 4.22)</td><td colspan="2">Demo and video, final report</td></tr>
</table>

5. Tasks for Each Member:

In the first five weeks, the tasks can be divided as follows:

- Zihan Liu: Database (data collection, data processing, data storing)
- Shuchan Zhou: Implement WebSocket server and add RESTful API
- Zeyu Li: develop the user interface, frontend routing, and user authentication

In the later five weeks, we will integrate the whole project together including the interaction of frontend and backend, testing and debugging.
Then, for the reports, demo, and video, we will introduce what we've done respectively.