Project Topic (Part 2)

Alternatives

Alternatives to the housing listing platform include the Towson University Off Campus Housing Portal, Apartments.com, Zillow, Apartment Guide and Redfin. The Towson University Off Campus Housing Portal offers a listing space for Towson University community members to have access to review available listings that are specifically posted by property listers. The Housing Portal requires listers to login and make a posting available for students while having the ability to directly manage their listing in relation to students. An additional feature of the housing portal is the roommate matching component. This component enables students to create a profile that includes their demographics, rent preferences, and lifestyle preferences to receive roommate matching suggestions. Apartments.com, Zillow, Apartment Guide, and Redfin all post local listings to their site. The listings posted to these sites are available to everyone participating in a rental search. On all the listed alternatives, users can search and parse through the site's listings by searching based on their preferred location using an exact address, county, or zip code. Users are also able to sort, and filter based on their preferences including price range, bedroom quantity, bathroom quantity, amenities, and distance from searched location.

Another type of alternative is social media postings. Social media listings could be private or public depending on the existing user. In contrast to the previously stated alternatives, social media postings do not allow users to perform custom searches or custom filtering. However, social media does provide a more personal affect to understanding potential roommates or landlords.

Value

This project is worth developing because it centers the need of Towson Students to find reasonable, secure and safe housing accommodations. Through challenges expressed by international and off-campus students, the Towson University Housing Portal aims to close gaps in a lack of access to resources exclusively for Towson University community members. The portal will give Towson University community members the opportunity to have affordable and secure housing.

Novelty in our Approach

AI/ML integration to enhance student search

AI and ML will be used to enhance the quality and abilities of the housing and roommate search processes while using the platform. Through analyzing user preferences and behaviors, the platform can offer users personalized housing and roommate recommendations. The AI/ML search will use different attributes such as rent prices, neighborhood safety metrics, and availability to provide tailored suggestions to students.

Personalized roommate-matching system

The roommate mathcing system will pose the most benefit to off-campus and international students who are looking to reduce their cost of living by obtaining shared living accommodations. This feature will allow students to enter their lifestyle preferences and habits into a questionnaire to build a profile in the matching system. The ML/AI algorithms will match students with each other based on the information entered in their profiles.

Integration of university services to support the search process

The integration of university services into the platform creates an easily accessible hub for student housing. The platform can be synced with campus security, campus health, campus fitness, financial aid, and dining to provide the Towson University community members with swift access and updates about campus activities.

Technical Point of View

From a technical point of view, the most interesting feature or dynamic will be the verification system to ensure that the only individuals with access to the system are Towson University community members. This will involve the collection of a community member's TU NET ID at the point of sign up that is then verified by a matching algorithm against the university database.

Also, building out search algorithms tailored to student needs through AI/ML is a significant challenge. Training a model can pose to be costly due to the high amounts of computing resources required to complete this process. However, the addition of the AI/ML feature will allow better matching performance in relation to housing accommodations and roommates while providing an overall enhanced user experience.