

# Campus Sherpa

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## ABSTRACT

We describe the motivation, design, and evaluation of the Campus Sherpa app, which helps users create and take custom tours of the Massachusetts Institute of Technology (MIT) campus. The motivation for the app came from a study where we found a large number of people, such as prospective freshmen, incoming graduate students, tourists, and parents all expressing the need for custom tours of the campus. Our app was designed to address this need by allowing users to create, upload, and take custom tours of the MIT campus. (TODO: INCORPORATE FIELD STUDY RESULTS HERE)

## Author Keywords

Geolocations; campus; tours; location tracking; tourism; campus; sharing

## INTRODUCTION

MIT receives a number of visitors each day from various demographics- prospective undergraduates/graduates, tourists visiting Boston/Cambridge, professionals or researchers attending a conference on campus, middle school students enrolled in Splash, etc. Many of these visitors take campus tours which take them to the main sights at MIT, such as the Student Center, gymnasium, auditorium, main hallway, and architecturally impressive computer science laboratory). However, this “one size fits all” nature of the tour fails to take into account the interests of each visitor and show them all the sights that they would enjoy seeing. For instance, it is plausible that a prospective graduate student in biology would like to follow a tour of the biology labs, while a tourist interested in history would like to be taken to the most historically important sites at MIT.

## RELATED WORKS

There exist a number of products and applications aimed at making tour taking more exciting and enjoyable. Interactive exhibits at museums and college campuses aim to improve upon the tour taking experience by allowing tour takers to interact with what they are touring. These interactive kiosks

often serve many tourists at once, and fail to provide a custom tailored experience to each user. Often, these interactive stations can get bogged down with traffic, resulting in long wait times which only frustrates the tourist.

There exist a few mobile applications that try to enrich tourism as well. Applications in this domain fall into two main categories: applications that try to replace the tour taking experience all together, and applications that try to supplement existing tours. Applications in the first category include the Library of Congress Virtual Tour, Canadian Museum of Civilization, and American Museum of Natural History mobile applications. Although these virtual tours allow more users to “explore” a tourist destination, they fail to replicate the experience of touring in person. A 3.5” to 5” screen is not a good way to replicate a tour.

Applications that try to supplement existing tours include: the Boston Freedom Trail, Walking Cinema: Murder on Beacon Hill, and LAT Star Walk mobile applications. These applications do take in the users position so they can serve them content when they reach specific locations, but they lack the ability to create and share custom tours made by other users. With these applications, users are limited to the content made by the developers. While these applications usually only provide users with information specific to one tour, Campus Sherpa allows users to browse and take many tours of MIT, as created by other users.

## BACKGROUND

(TODO: EXPAND SECTION) Motivated by the above observation, we first identified the types of people touring MIT. We decided that for the purposes of campus tours, we can broadly classify people as current students, prospective freshmen, parents, and tourists. In order to gather information about these groups, we conducted a survey of these four groups, with some questions common to all four groups and some tailored to a specific group. Here are some of the questions we asked (TODO: SHORTEN QUESTION LIST IF NEEDED):

### Everyone:

- What is the most memorable site youve visited here? Why?
- What is the one thing you most wish to see here? Why?
- Have you gone on a tour of MIT?
  1. Are there any questions the tour guide didnt answer?
  2. Did the tour take you everywhere you wanted?

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3. Did the tour leave out any place you wanted to see?

**Current Students:**

- What are three things you looked for when touring MIT?
- What is one place that the tour didn't cover, which you think tourists should see?

**Prospective Freshman:**

- If you could ask a current student one question about MIT, what would it be?
- What aspect of MIT do you want to explore the most?

**Parents:**

- What are three places you want to tour at MIT that you think your child might not want to?
- If you could ask a current student one question about MIT, what would it be?

**Tourists:**

- How long will you be visiting MIT?
- In a sentence, why did you want to come visit MIT?

Approximately twenty people responded to the survey, evenly distributed across the four demographics. Some of the responses to the survey are:

"There are always too many things to see ... I am wishing I can see more later" (current student)

"Campus Preview Weekend (CPW) was really rushed, and I did not get to see everything" (prospective freshman)

"I wish I could get a better sense of MIT culture. The tour guide briefly touched on how each dorm was different, but did not go into detail." (prospective freshman)

"I wish they had shown us where the students hang out" (parent)

"I wish I could get a better sense of MIT culture. The tour guide briefly touched on how each dorm is different, but didn't go into detail." (tourist)

From the above responses, we saw that a common complaint was that people were not able to visit places they wanted to with the regular campus tours. In order to solve this problem, we proposed an application that helps create and share custom tours of the MIT campus called "Campus Sherpa".

Since smartphones offer location awareness and mobility, they are the obvious platform choice for "Campus Sherpa". By deploying this application for iOS, users can take out their smartphone when they arrive at MIT, select a tour based on their interest, and then begin exploring sites that will be most useful to them.

The second aspect of "Campus Sherpa" that we wished to support is to allow users to chronicle their tours and share them with others. As prospective students compare MIT to other schools or as tourists reminisce about their visit to MIT,

the ability to record their tours (by associating locations with text, photos, videos, and links to related content) will aid them in remembering. For current students, this offers a way to record the precious memories they make at MIT and share them with others. Thus, the primary audience will be people who aim to tour MIT and record their experience there. The secondary audience will be current MIT students who would like to chronicle their lives at MIT.

While some MIT tours will be pre-installed, the majority should be user-created. Based on our own experiences and the responses to our survey, people have varied tastes and desired destinations when visiting MIT, and we aimed to make sure that their trip to MIT is as enjoyable and productive as possible.

By creating an application to let users create, share, and follow custom tours of MIT, we hope to make college tours custom fit to each person's taste, to make memories of MIT easy to record and share, and to make a platform for sharing tours.

**SYSTEM DESCRIPTION**

"Campus Sherpa" allows users to achieve two goals:

- Take custom tours
- Create tours based on experiences.

The app has a number of pages for different tasks, but the three most important tasks that users need to achieve are:

- Make a Tour
- Select a Tour
- Take a Tour
- Make a Tour

We implement a tour as a set of geolocations (i.e. latitude and longitude), each associated with media (i.e. text, links, pictures, audio, video). The interface for making a tour consists of a screen which displays the tour so far - providing a map of the geolocations on the tour. Users can edit geolocations by selecting them on the map, or they can create a new one by clicking a button.

The geolocation creation/edit screen automatically fills in the user's current location (via GPS) and a default geolocation name. The screen also displays the associated media for the geolocation and buttons to add new media (each of which has its own screen) (TODO: FIGURE FOR CREATE/EDIT)

Users should also be able to select a tour to take. The "Select a Tour" screen provides a list of the tours and a means for searching and filtering them. (TODO: FIGURE FOR SELECT TOUR)

The "Take a Tour" screen allows users to take tours displays a map of the user's current location and other locations on the tour. The bottom of the screen includes a set of boxes with thumbnails for the associated media. When the user taps a box, the media is displayed on the screen (TODO: FIGURE FOR TAKE A TOUR)

There are other screens in “Campus Sherpa” - a home screen (from which we will launch other screens), a user profile screen, a settings screen, a help screen, etc. (TODO: SOME MISC FIGURE)

### Technical Details

We use Parse for the backend. Parse is a backend-as-a-service which provides an SDK for iOS which allows users to persist objects on the server. This is much simpler than building a backend from scratch. For this project, we persist and retrieve latitude/longitude, text, pictures, and audio - which Parse supports. Since this application does not run in a browser, we do not have any browser dependencies (TODO: EXPAND THIS)

### FIELD STUDY

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### Conclusion

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### ACKNOWLEDGMENTS

We thank the participants of our studies and exercises for their time and effort, as well as for allowing us to use their thoughts and comments in both this paper, and in the development process of Campus Sherpa.

We also thank Ed Barrett, Frank Bentley, and Jason Martin Lipshin and the entire 21W.789 staff for their continued support and advice. Without them, Campus Sherpa would not have been possible.

### REFERENCES FORMAT

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