i290: Social Computing

Project Proposal

Concept: *Application that accompanies book of bike rides in any given region.*

Problem Definition [Paul]

The publishing industry sells bicycle guidebooks that are carefully curated and generally contain excellent content. These guides allow cyclists to explore new routes with confidence, enjoying the cycling and leaving the planning to others. Some publishing companies offer “e-book” versions of their titles, but these cycling guide books do not facilitate sharing of ride experiences and typically exist in isolation from social media.

At the same time, a number of web services geared towards amateur cyclists support social media but often lack quality content about ride routes. Furthermore, these services are most often focused on individual athletic performance rather true social connection or enjoyment. With this project, we plan to marry the best content from ride guides with the sharing and other social capabilities of social media.

Motivation for Solving the Problem [Paul]

As Bay Area transplants eager to explore the surrounding region by bicycle, we purchased guide books to help us discover the best rides in the area. We quickly found, however, that the book is simply not the best form for these guides to take. As users of smartphones and social media, we were surprised by how the guide book industry is failing to adopt new technologies to as they distribute their content.

Crowdsourced cycling content is as yet inferior to the content found in traditional cycling guide books. We believe that quality content should exist in parallel with opportunities for social interaction. In addition to making interaction with guide books more pleasurable and useful, adding social components to traditional guides will leverage community insight to evaluate the quality of individual ride and provide instant feedback to readers and publishers.

Problem Significance [Paul]

The guide book industry at large is currently grappling with the best way to develop offerings for mobile- and web-savvy customers before those customers are lost to free guides online. Ride guides in particular are increasingly at risk of marginalization as a result of the growing collections of free and crowdsourced cycling content on the internet. By modernizing traditional cycling guides and adapting the social tools available through the internet, this challenge can be addressed in a manner beneficial to both the publishing industry and their customers.

Social Component [Rowyn]

We will focus on building three key social components into our application:

1) We will provide users with the ability to organize and join group rides through the application and through the use of other social media platforms like Facebook and Twitter. This functionality will allow users to both post to social media and browse relevant social media content through the application.

2) We will allow users to provide qualitative and quantitative data about rides. For instance, users might rate the ride, report road surface quality, or comment on vehicle traffic.

3) We will provide users with data that on predicted route cycle traffic aggregated from data provided by other users and, where possible, other cycling communities (MapMyRide, for instance).

Planned Approach in Problem Solving [Rowyn]

The mobile space is especially well suited for cycling, since it allows access to dynamic content while the user is literally on the move. Mobile applications also provide an exciting platform for social exchanges, since they can capitalize on the web's many social functions in ways that are more difficult or impossible for a PC. Examples include location-based information, trending topics, and up-to-the-minute changes in logistics.

Our goal is to develop an iOS application that supports social analysis among cyclists with Moon's curated content as a launching point. This will include access to Twitter feeds, traffic patterning on maps, user feedback concerning the specifics of trails, and collaborative tools that will allow interaction with other users. Some cyclists may choose to use this information to connect with other riders; others may use this information to avoid large gatherings in pursuance of more solitary rides.

Algorithm and Data Set we plan to use [Brendan]

The application will access the Twitter API to analyze and retrieve user locations via hash tags and geotagging. We may also incorporate Twitter sentiment analysis into the application's trail feedback component. We also plan to use the geographical coordinates of the app users to infer details about cyclist networks and location, which will allow the app's user to connect with others or avoid them. Input from user locations, proscribed trails, and the traffic present on those trails will be delivered to the end user via a map API (potentially Google Maps, but we've also discussed other tools that present a more modern look and feel).

[Ariel]
Cycling tends to be done in small groups with at least one of the members 'tracking' the ride via an on-board computer or mobile application. These applications let cyclists keep track of the route traveled, average and maximum speed, altitude climbed, and many other data points of interest. At the end of each ride the information is typically shared between riders via web services like mapmyride.com or runkeeper.com which store a repository of user submissions and notes about specific rides. Our application may tap into the vast amount of information collected at mapmyride.com to complement static information with real-time crowd-sourced metadata.

Validation Plan [Brendan]

We will start with a web prototype, and do an informal round of user testing to ensure that the interaction we start with will be sensible and friendly to the targeted market segment. After we have a sound foundation, we'll apply that framework to the iPhone environment. While we do not expect to have a fully functioning application by the end of the semester, we do intend to have something available to use on the iPhone that includes some of these features.

[Ariel]
The application's ability to incorporate social data from services like Twiter and MapMyRide will be one of the focuses for early validation. While there are other cycling applications in use by the cycling community they do not make use of the huge potential of social computing to provide a cycling experience which is informed and improved by information collected from the cycling community though social media.

Project Milestones [Paul]

Major milestones:

1) Low-fidelity prototype of application created with Balsamiq or similar
2) High-fidelity prototype of application created with HTML or similar
3) Social data flowing into and out of application
4) User testing initiated
5) Application built and in hands of potential users

APPENDIX: *App Brainstorming*

App to perform the following functions:

Ride Look Up
Search for rides "nearby" or by distance from you
Filter rides by your interests (distance, difficulty, road/dirt, time, etc.)

Ride Detail
Map
Textual description (list of segments/turns)
Topography
Ratings
User annotations (e.g. road conditions, dangerous intersections)

On Ride
Ride detail plus navigation support
Trip computer

Social Element
Ratings
Ride recommendations
Group rides
Schedule your ride
Output to dailymile.com or mapmyride.com