


CS486C – Senior Capstone Design in Computer Science

Project Description

Project Title: Route 66 Companion	
Sponsor Information: 	Mike Taylor NAU Cline Library Head, Technology Strategies and Services mike.taylor@nau.edu Mark Manone NAU College of Social and Behavioral Sciences Director, Geospatial Research and Information Lab (GRAIL) mark.manone@nau.edu

Project Overview:



Next year is the 100th anniversary of Route 66. Celebration events have already begun and include many locations in Arizona. Cline Library's Special Collections and Archives (SCA) is home to several collections with a focus on Route 66. We have featured exhibits in the past and are already planning a major exhibit to join in the celebration. We expect many people to travel the "Mother Road" to celebrate its history and explore it's all it has to offer.

Cline Library's Special Collections and Archives (SCA) is home to unique collections that help tell the stories of the Colorado Plateau. These images, manuscripts, diaries, maps, and other items provide a valuable resource to researchers, students, and others with an interest in the many topics contained in our physical and digital collections. Whether your interests are in river guides of the

Colorado River (before the dam), stories about trading posts across the Navajo Reservation, or points of interest along Route 66, we are the location for unique primary sources to aid in your research, learning, and curiosity.

SCA archives contain a vast array of digital images that are used extensively for research and educational purposes. Over 100,000 items have been digitized and made available on a searchable platform called CONTENTdm. The image above (Do you know which iconic movie featured this location?) can be found [here](#). You might otherwise fly right by this spot if you didn't know it was a cool place along Route 66 to get a selfie. SCA has hundreds of photos, oral histories, and other resources, all focused on Route 66. Navigate to <https://nau.edu/special-collections> for a look more photos and other resources from Route 66. We would like to be able to engage users with useful and fun information at the point of need as they travel along Route 66.

We envision a responsive mobile application that would provide relevant Route 66-focused resources based on a user's location. If the user is not currently "on the road", they should be able to enter a location. For example, opening the app in Joseph City would bring up [this famous image](#) pointing the way to Jack Rabbit Trading Post:



Along with this and other images and information, the app would allow the user to listen to an oral history about the trading post.

The ability to access data related to usage would be especially helpful. This can be provided in the form of an admin-only, webapp-based dashboard that visualizes key statistics such as user access over time, most frequently visited images or locations, and general patterns of interaction with the app. The visualizations are interactive, allowing for filtering, toggling features, among other interactivity capabilities.

Bonus feature: Directions on how to get to nearby attractions and “What’s coming up next”.

Double-Bonus Feature: A running commentary based on oral histories (Or their transcripts).

Knowledge, skills, and expertise required for this project:

We can provide some assistance with GIS-related skills

Knowledge of modern Web2.0 programming techniques, languages, and frameworks

GIS: Location-based trigger for content

GIS: Geofencing of imagery narratives

Potentially, iOS and Android application development

Basic understanding of user experience (UX/UI), user design (UD), and accessible web/app interfaces

Skills in GUI design and evaluation

Equipment Requirements:

There should be no equipment or software required other than a development platform and software/tools freely available online

Cline Library will provide a dataset of images as well as API access to CONTENTdm

Software and other Deliverables:

A complete software product as outlined above, fully tested, and installed on a platform of client's choice

A strong as-built report detailing the design and implementation of the product in a complete, clear and professional manner. This document should provide a strong basis for future development of the product

Complete professionally documented codebase, delivered both as a repository in GitHub, or some other version control repository, and as a physical archive on a USB drive