sdmay19-37: Are Cross Country Courses Avoiding Hills?

Report 7

March 10th - March 30th

Team Members

Connor Smith — *Ground Truth Engineer*
Thomas Chambers — *Ground Truth Engineer*
Ryan Hilby — *Data Handling Engineer*
Jacob Feldman — *Data Handling Engineer*
David Kirshenbaum — *Data Analysis Engineer*
Andrew Mumm — *Data Analysis Engineer*

Summary of Progress this Report

These weeks prior and after spring break resulted in the single biggest advance in progress of our project of the entire academic year. While this mainly was because we were able to integrate and conduct preliminary testing on every part of our process, it was also highlighted by an accumulation of more course maps for study. Jacob was able to make significant strides on compressing the county-by-county LIDAR data, making it much more feasible to upload counties to our AWS database. Andrew spent a significant amount of time going through the analysis scripts of Connor, Thomas, and Ryan (all non-software engineers) and restructuring/optimizing them to improve the project's code quality.

Pending Issues

There aren't any issues which currently stand as hurdles to our progress, but we have a lot of work yet to do with evaluating the course maps we've accumulated before the end of the semester.

Past Week Accomplishments

- Connor
  - Worked with Andrew to integrate segment classifier and cost/difficulty rating scripts
  - Obtained additional course maps for analysis
  - Began formal write-up of our analysis techniques for final presentation
- Thomas
  - Contacted more officials for courses and organized/curated courses to select regions of Iowa we'll do analysis on.
- Ryan
  - Found more courses for analysis
- Jacob
  - Compressed Story county to a reasonable size.
- David
  - Worked on the communication of data between website and AWS.
  - Fixed various bugs to do with data sending as well as display on the website. Added a map to scorecard page.
- Andrew
  - Fixed up python scripts by shortening logic and cleaning up bugs. Added documentation for the

functions and added comment stubs for what is yet to be added. Generated some test data to allow for easier testing on a larger scale.

Plans for Upcoming Reporting Period
● Connor
  ○ Finish formal write-up of analysis techniques and template for changed-course findings
  ○ Work with Thomas and Ryan to evaluate courses using now-functional web app
● Thomas
  ○ Evaluating courses and calibrating difficulty rating.
● Ryan
  ○ Work with Connor and Thomas on evaluating courses
  ○ Help find more courses if needed
● Jacob
  ○ Compress our data storage format even further, and begin uploading counties that we have course data on. This will be an ongoing process for several weeks.
● David
  ○ Work more with the display of the website by making the drawing tool look/work better, adding a graph to the scorecard page, working on website navigation, and just general UI improvements.
● Andrew
  ○ Continue improving the scripts to be more resilient to failures. Help David with the front end.

Individual Contributions

Team Member	Contribution	Weekly Hours	Total Hours
Connor Smith	Script integration and write-up	10	41
Thomas Chambers	Course collection	4	30
Ryan Hilby	Found more courses	4	29
Jacob Feldman	Compressed Story County	12	55
David Kirshenbaum	Website stuff	10	38
Andrew Mumm	Python and lambda script improvement.	24	61