

sdmay19-37: Are Cross Country Courses Avoiding Hills?

Report 8

April 1st - April 13th

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

This week was filled with troubleshooting, testing, and optimizing both the front and back-ends of our software. Since the data analysis team has been in somewhat of a holding pattern until some of these tweaks have been made so they can do their final calibration of the rating scale, they focused their efforts on preparing the testing process along with preparing the presentation materials and formal documentation for the end of the semester. Massive improvements in file compression for the LIDAR uploads were accomplished by Jacob, allowing us to save a considerable amount of money in cloud storage costs. The front end was also modified to be more user friendly via the addition of things like loading icons and more color.

Pending Issues

Our current processing time for courses is higher than our goal, and we currently are unable to test courses beyond 6000 m (~2000 datapoints). While this is tolerable for our immediate purpose of evaluating 5000 m high school cross country courses, this will need to be addressed if we want to apply this software to longer distance races.

Past Week Accomplishments

- Connor
 - Found additional Iowa XC courses for rating calibration
 - Worked with David to learn testing process for website
- Thomas
 - Organizing courses by county, locating courses on Google Maps, work on final presentation.
- Ryan
 - Learned how to use XC course evaluator website
- Jacob
 - Combined preprocessing and upload of data into a single script so a county can be dealt with with only one click. Reuploaded Story county in the new, final compressed format. Also uploaded Linn and Black Hawk counties.
- David
 - Drawing tool visual updates
 - Worked to try and diagnose why website results were failing
- Andrew

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- Hardening of the project (Working out bugs and making the computations faster)
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Plans for Upcoming Reporting Period

- Connor
 - Finishing testing and deciding on final calibration for ratings
 - Thomas
 - Final testing and final presentation.
 - Ryan
 - Work on presentation
 - Test XC courses
 - Jacob
 - Upload the rest of the counties we've decided on uploading
 - David
 - Keep working on quality of life changes for the website
 - Andrew
 - Trying to reduce computation and query time.
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Individual Contributions

Team Member	Contribution	Weekly Hours	Total Hours
Connor Smith	Course research and testing	5	46
Thomas Chambers	Course organization	4	34
Ryan Hilby	Learning testing process for website	3	32
Jacob Feldman	Packaged pre-processing and Upload code into the same file. Reuploaded Story county in the new, compressed format. Uploaded Black Hawk and Linn Counties.	16	71
David Kirshenbaum	Website upgrades and trying to figure out why it's not working	10	48
Andrew Mumm	Improving the project overall	8	69