sdmay19-37: Are Cross Country Courses Avoiding Hills?

Report 5

February 23rd - March 2nd

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
We were able to move significantly closer towards our March 15th goal of integrating the elevation classification code with the actual cloud-stored LIDAR database. Ryan, Thomas, and Connor worked together to integrate all of their classifying code into a single function call within MATLAB and began the process of converting all code to Python. Andrew and Jacob made significant progress as well on improving our handling of the vast quantities of LIDAR data and our ability to access that data. David continued to tweak our front-end website's UI and is now ready to accept the lambda function's elevation return for processing and subsequent display to the user.

Pending Issues
We currently have an issue where our query of the LIDAR database is missing certain windows of points randomly distributed through each county. We believe that this stems from our method of uploading the code to our AWS database, but additional work is needed to rectify this before we can reliably query the database for all the points we need.

Past Week Accomplishments
- Connor
  - Added distance weighting to energy cost calculation
  - Worked with Thomas and Ryan to integrate all classification code together
- Thomas
  - Integration with Connor and Ryan, conversion to Python, rewriting Rolling Hills Detection.
- Ryan
  - Integration with Connor and Thomas and conversion to Python
- Jacob
  - More debugging and optimizing of upload code. Can now upload an entire preprocessed county at once (in about 4-5 hours).
- David
  - Improved website UI
  - Looked to working with calling our lambda function in Angular
- Andrew
  - Connected API gateway to Lambda

Plans for Upcoming Reporting Period
- Connor
  - Work with Thomas, Ryan, and Andrew to integrate classification code with the actual LIDAR database
- Thomas
  - Integration with data crew, and the rest of the group.
- Ryan
  - Integration with Lambda function
- Jacob
  - Debug upload code. Upload more counties, optimize R processing script because it is now the bottleneck in uploading.
- David
  - Work with Mumm to get communication set up with AWS and the website
- Andrew
  - Finish connecting all Python classifying code to Lambda

Individual Contributions

Team Member	Contribution	Weekly Hours	Total Hours
Connor Smith	Distance weighting calculation	4	26
Thomas Chambers	Code integration	4	22
Ryan Hilby	Code integration/Python conversion	4	21
Jacob Feldman	Debugged an optimized upload code.	10	35
David Kirshenbaum	Preparing website for communication with AWS	3	22
Andrew Mumm	Lambda API gateway connection	5	21