Machine Learning with Accelerometer and GPS Data
Deliverable #1

- Features:
  - Priority I features: to identify road hazards
    - Feature 1.1: potholes and speedbumps
    - Feature 1.2: curvature/inclination of roads
  - Priority II features: future functionality (nice to have)
    - Feature 2.1: sub-standard roads (flooding, mud, etc.)
    - Feature 2.2: deterioration analysis of roads over time
    - Feature 2.3: road debris
- Schedule of Deliverables (All deadlines are Los Angeles Time)
  - Deliverable 2
    - Deadline: 11:59 pm September 15th
    - Exploratory data analysis on kyrgyzstan.csv
    - More research on machine learning techniques
    - Decide on two machine learning models for potholes/speedbumps
  - Deliverable 3
    - Deadline: 11:59 pm September 29th
    - Two Trained potholes/speedbumps model that are ready to test
    - Decide on two machine learning models for inclination/curvature
  - Deliverable 4
    - Deadline: 11:59 pm October 13th
    - Two trained model for inclination/curvature that are ready to test
  - Deliverable 5
    - Deadline: 11:59 pm October 27th
    - Improvement/finalization of potholes/speedbumps model
  - Deliverable 6
    - Deadline: 11:59 pm November 10th
    - Improvement/finalization of inclination/curvature model
  - Deliverable 7
    - Deadline: 11:59 pm November 16th or 30th depending on our date of project presentation
    - Final model for potholes/speedbumps
    - Final model for inclination/curvature
    - Complete documentation for both models, including our recommendations of how to further train these models for Priority II features
    - Present this project during class
- What machine learning techniques we want to learn or apply on this project
  - Linear regression
  - Logistic regression (first to try for Priority I features)
  - Decision tree
  - Artificial neural networks
- What resources/help we need from Sandra/Kevin/Jens
  - HPC accounts with access to machine learning library, such as TensorFlow

- First 50 rows of the raw dataset (kyrgyzstan.csv received)
- Guidance on machine learning techniques
- Requirements on documentation