Proof of Concept

Proposition

“Is it possible to make a sports application designed primarily for running or perhaps cycling which can create a sort of ‘scenic’ route based on a user’s interests with the help of Machine Learning algorithms.”

Why?

- Usually the most optimal/fastest route
  - GPS/GIS
- User more interested in POI’s
  - Sea, nature, monuments, ...

What is ML?

- Using data (clusters) to make predictions
- The more data the better
- Dependant on the proposition or question
- Supervised vs unsupervised
- Selecting the right algorithm(s)
- After data-analysis a model is produced
- Model gets tested and further enhanced

How?

- Data? -> Images
- Google Maps, TripAdvisor, Instagram, Flickr
- Scraping -> storing in DB

How?

- Use ML Image Recognition Algorithm
- Clarifai
  - API with neural networks and a trained model that return keywords/tags that are likely to be in the picture
- Will probably be harder for specific cultural places but additional data can be added through other platforms

How?

- Get user input
- What kind of scenery does our user like?
    - Monuments, rivers, mountains, museums, ...

How?

- We have the gathered data between two locations
- We must build a neural network
  - Determine whether the gathered piece of data would be interesting for the user
  - Label them with a number for example

How?

- We gathered POI’s
- Time to make the most optimal route between these POI’s
  - Travelling Salesman Problem, solved with genetic algorithm
  - Solve with ML
- Demos

Possible Extras

- Make app smarter by adding
  - EEG -> measure brain waves
  - Galvanic Skin Response -> measure sweat