



MOTIONTAG

Machine Learning Coding Challenge

Welcome to the MOTIONTAG coding challenge! We hope you are feeling well and you are up for a small challenge.

This challenge is supposed to help us evaluate your coding skills and style. So both will be rewarded. Attached you will find a task description as PDF and a 'waypoints.csv' file.

You will have 1 week to complete the challenge. You can send the challenge back to May when you are done.

Should you have any questions please do not hesitate to ask us any time.

We wish you good luck and happy coding!



Data Description

We attached a CSV-File called 'waypoints.csv'. Waypoints are points in time and space that are recorded during the travel of a person. Some of the waypoints are marked as outliers.

attributes	description
id	unique id of the waypoint
latitude	latitude of the recorded position
longitude	longitude of the recorded position
accuracy	accuracy of the position in meters
time_min	time when the position was recorded in minutes
outlier	True if the location is an outlier and should be filtered.



Coding Task

Write a Python Flask API that can be deployed as a docker container. The purpose of the API is to filter given waypoints and return all non-outliers. What you need to implement is...

- A small Flask API that expects waypoints formatted as JSON
- Waypoints posted to the endpoint 'http://<host>:<port>/waypoints' should **only** contain 'time_min', 'latitude', 'longitude' and 'accuracy' attributes
- A Python class in an extra file that filters these waypoints by accuracy and velocity
 - to filter the waypoints you can use simple hardcoded thresholds
 - since velocity is not provide you still need to compute it
 - and find the threshold for both accuracy and velocity
- Only non-outlier waypoints should be sent back as a JSON to the caller containing the same attributes as the request
- This API should be wrapped into a docker container
 - the container should be locally executable
 - and callable from the host machine
 - please provide a description on how to build and run the container or a executable shell script to run it
- Please provide a small script that can call this API with the waypoints from the host machine

Please provide us with the executable code packaged in a **ZIP-File**.

HINT: To be able to apply the thresholds, you need to go sequentially through the waypoints and check velocities to the last non-outlier waypoint.