

# Viaduct Data Science Coding Challenge

January, 2019

Download the walking activity dataset, which is available at the following link: <https://bit.ly/2G8aHx1>. This data was used in a 2012 paper by Casale et al. to analyze human walking patterns of 22 participants.

You are working at a company that develops personalized recommendations for users based on their walking habits and behaviors. Your manager asks you to analyze this dataset, as your company hopes to build a unique “signature” for each user based on how they walk.

## 1 Open-Ended Question

Analyze the data, and discuss the three most interesting insights that you have discovered. Note that this is a time series dataset, so be sure to incorporate the “temporal” aspect of the data in your analysis.

## 2 Method development

Sketch out a pipeline for how you would use this data to create a low-dimensional “signature” for each user. You do not need to implement this system, simply discuss your method and the steps you would need to train/validate it.

**Deliverables** We ask you to submit all code, as well as a writeup of your results. Your writeup can be in whatever form you prefer (text document, presentation, etc...). Please send all deliverables to David Hallac ([david@viaduct.ai](mailto:david@viaduct.ai)) - thanks!