

# Project description: Pattern extraction and profiling of historical water network demand patterns

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## 1 INTRODUCTION

Some of the current water distribution infrastructure in the Netherlands is covered with a decent number of sensors to measure the real-time state of the network. Historical dataset of water network conditions can provide us with many insights into how water distribution networks are being used, their supply/demand patterns, seasonal variations, etc.

## 2 OBJECTIVES & GOALS

The goal and the knowledge gap which will be addressed in this project is to use unsupervised methods to create an algorithm for profiling and pattern extraction from historical sensor data of the network. The dataset contains real data, collected from the Dutch water distribution network over several recent years.

## 3 PROJECT PLAN

After getting the data, the first part of the thesis project will be used to better understand and become more familiar with the data. Depending on the schedules of other members related to the project, this could take some time, but should ultimately not take up a significant portion.

The main part of the project will be in researching different methods of pattern extraction, and then actually applying these methods, or trying to create one. The testing of these methods will probably take longer than initially expected due to the high probability of finding new knowledge or needing to update or change the algorithms.

## REFERENCES

