



Göteborgs
Stad



Turbinator

A new turbidity and water level sensor

Helen Galfi

City of Gothenburg
Sustainable Waste and Water - Kretslopp och vatten
Sweden

Challenges



Needs

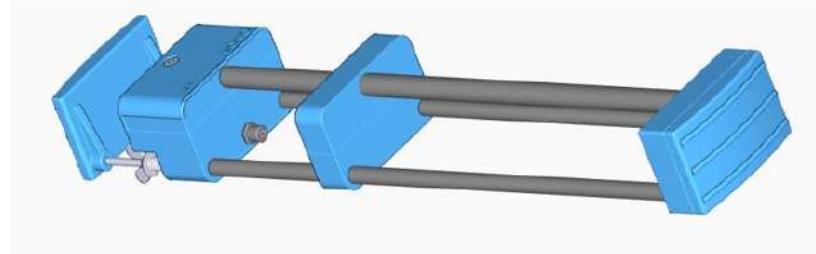


Digital solution

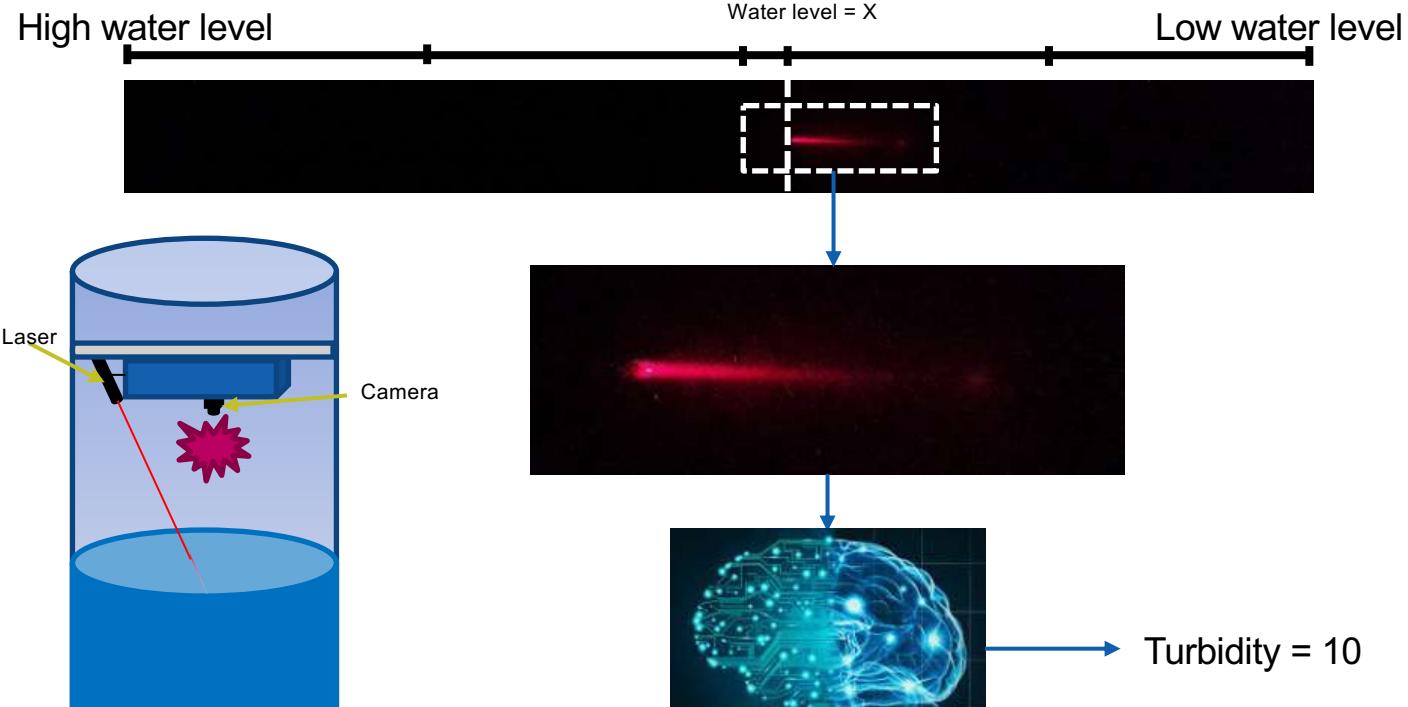


Turbinator – IVL development

- measuring turbidity and water level
- based on image processing and machine learning algorithms

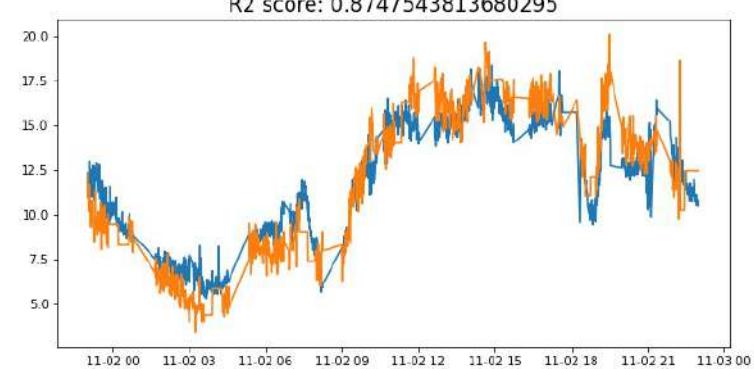
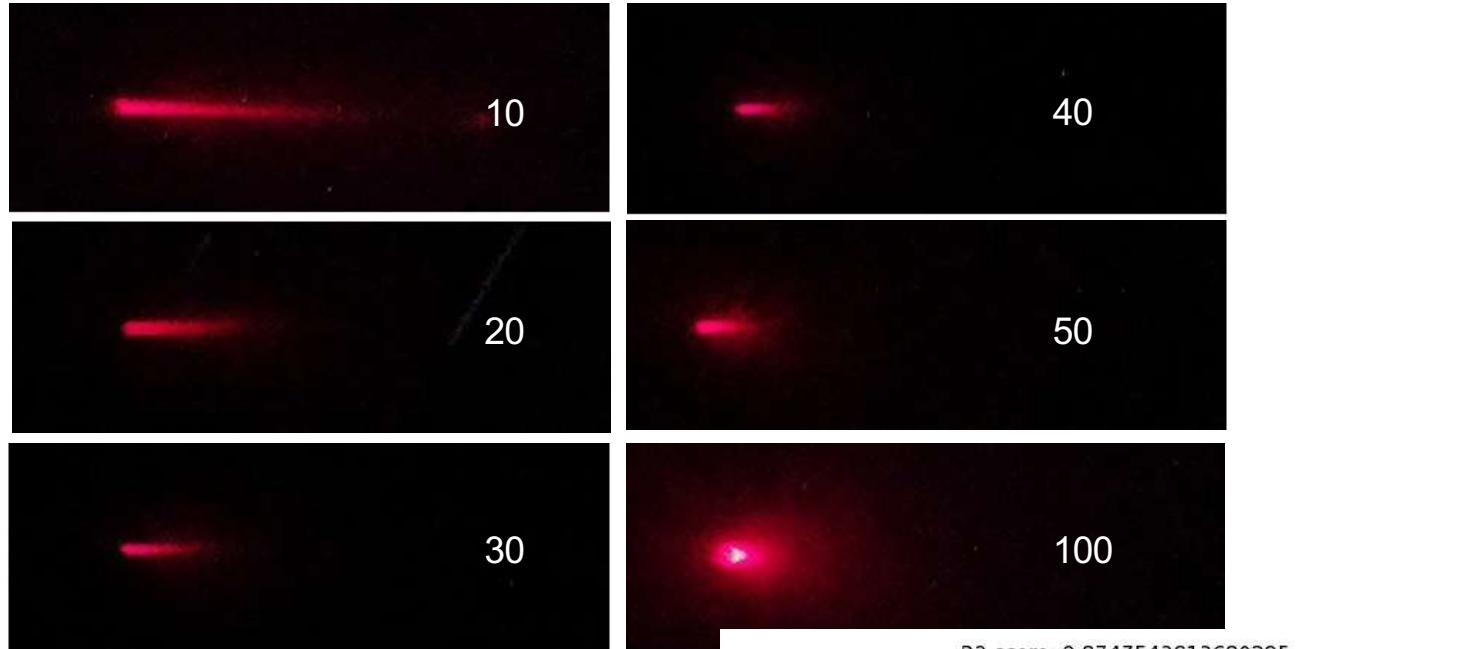
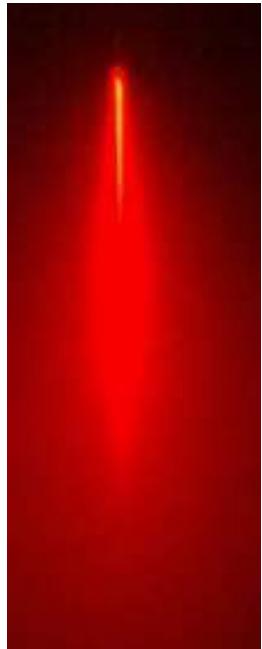


Digital solution – Turbinator step by step



Convolutional neural network – AI trained by thousand of pictures with varying turbidity to learn to recognize how varying turbidity values look like.

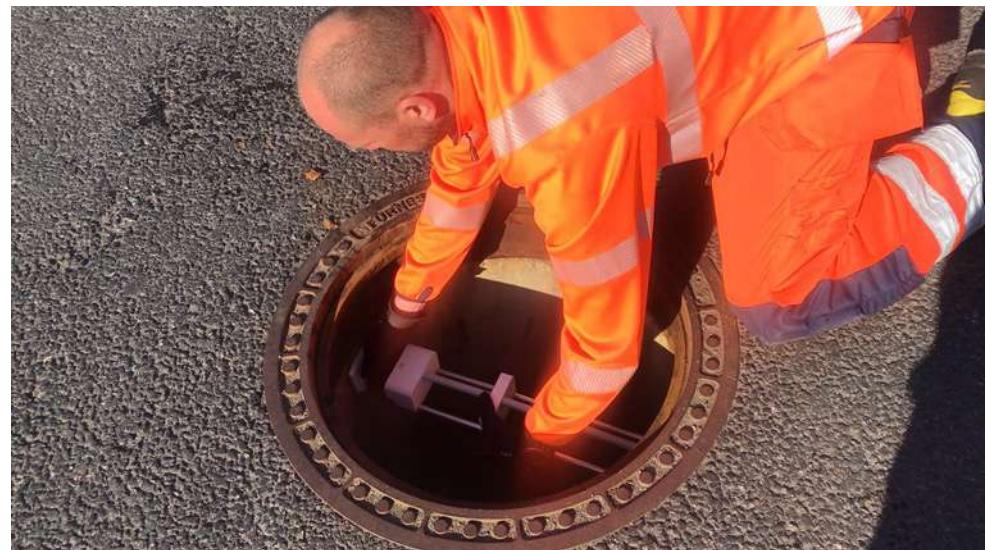
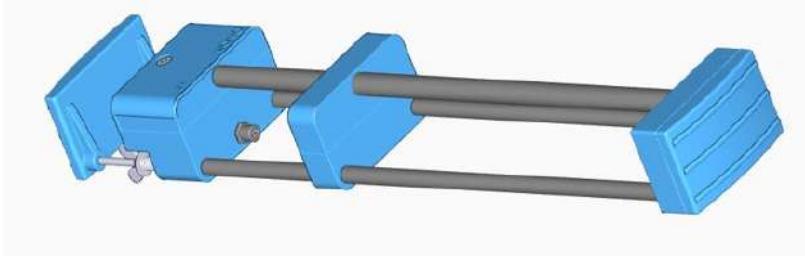
Digital solution – Turbidity measurements



Benefits

Turbinator

- affordable components, can be installed in many wells
- contactless and battery driven (3y battery time) minimum maintenance
- easy to install



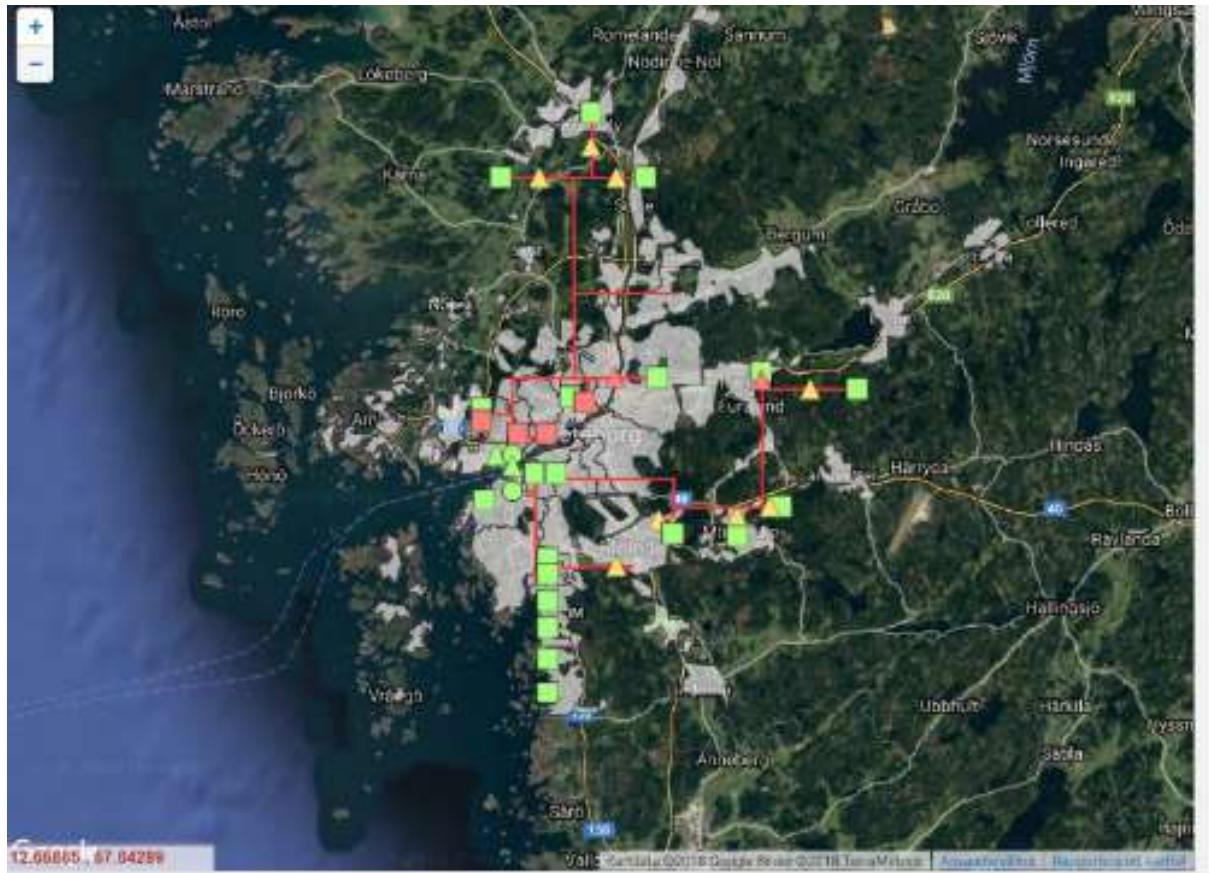
Challenges



- Turbinator seems to work on low turbidity ranges
- TSS vs turbidity – correlation analysis
- Turbinator in underground conditions vs surface conditions
- Validation and data in shared dataplattform

Vision

City of Gothenburg urban water map with real-time measurements at discharge points





Göteborgs
Stad

Thank you!

ivl talkpool



Kontakt: Helen Galfi

helen.galfi@kretsloppochvatten.goteborg.se