

# GECCO 2017 Industrial Challenge: Call for Participation

## Monitoring of drinking-water quality

2017 GENETIC AND EVOLUTIONARY COMPUTATION CONFERENCE (GECCO)

July 15-19, Berlin, Germany

Sponsored by ACM SIGEVO

<http://www.sigevo.org/gecco-2017>

26th International Conference on Genetic Algorithms (ICGA)

and the 22th Annual Genetic Programming Conference (GP)



*Largest Conference in the Field of Genetic and Evolutionary Computation*

### Overview

Water covers 71% of the Earth's surface and is vital for all known forms of life.

The holistic consideration of water as an important means of nourishment as well as the general protection of lakes and rivers are a central basis for the growth and further development of human civilization. At the same time, the civilization itself, with its steady growth, is a menace to the purity of water resources used for drinking water supply and its distribution network. They are highly sensible to any kinds of contaminations.

The provision of clean and safe drinking-water is an essential task for water supply companies all over the world. To deal with this scenario, highly sensible sensors monitor relevant water- and environmental data at several measuring points, on a regular basis. The monitored data can be analyzed to discover any kinds of anomalies.

This allows for early recognitions of undesirable changes in the drinking water quality and enables the water supply companies to counteract in time.

This year's industrial partner is Thüringer Fernwasserversorgung (TFW), which provides the dataset used in this challenge. Goal of the GECCO 2017 Industrial Challenge is to develop an event detector to accurately predict any kinds of changes in a time series of drinking water composition data.

Highlights of the GECCO 2017 Industrial Challenge include:

- *Interesting Problem Domain:* Event detection based on drinking water data offers a challenging test case for modern time series prediction methods.
- *Real-world Data:* Real drinking-water time series are provided for training, testing, and assessing event detection methods.
- *Direct Link to Industry:* The Thüringer Fernwasserversorgung will evaluate the winning submissions for an implementation in real-world applications. Moreover, a direct contact with the winning participants, who will keep all rights to their detection system, is highly appreciated by Thüringer Fernwasserversorgung.

### About the Thüringer Fernwasserversorgung

Located at the heart of Germany, Thüringer Fernwasserversorgung is a public water company with its headquarters in Erfurt. Thüringer Fernwasserversorgung operates more than 60 dams and reservoirs, 2 central water treatment plants and 550 km of bulk water transport network. With about 200 employees Thüringer Fernwasserversorgung transfers more than 50 million cubic meters of raw water and drinking water to its clients, local and municipal water supply companies, thus ensuring a reliable supply of highest quality drinking water to more than 1 million people.



### Important Dates and Contacts

- *Challenge Website:* <http://spotseven.de/gecco-challenge>
- *Software and Data Availability:* TBA
- *Challenge Submission Deadline:* TBA
- *Organizers:* , M. Friese, A. Fischbach, T. Bartz-Beielstein (Cologne University of Applied Sciences),
- *Industry Partner:* Thüringer Fernwasserversorgung, Erfurt, Germany, <http://www.thueringer-fernwasser.de/>
- *Contact:* [gecco@f10.fh-koeln.de](mailto:gecco@f10.fh-koeln.de)

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