



IHE Delft is the largest international graduate water education facility in the world and is based in Delft, the Netherlands. The mission of IHE Delft is to work in partnership to strengthen capacity in the water sector, to achieve global sustainable development. IHE Delft has a permanent staff of 200 of which more than 100 are academics from all over the world, while about 250 guest lecturers from academia and industry contribute to our educational programmes. Each year 750 professionals

(including about 200 new MSc students per year) attend courses at IHE Delft. The Institute has an international staff & student community with English as the working language.

The department of Hydroinformatics and Socio-Technical Innovation focuses on catalysing change in society, technology and policy, and enhancing the use of enabling ICTs, towards sustainability and resilience. Within the department, the Hydroinformatics chair group researches the use and application of information and communication technologies (ICTs), numerical modelling of water systems, machine learning, and information and decision support systems, in addressing water-related challenges and supporting water management.

Researcher position in Hydroinformatics

1.0 FTE/38 hours

We are looking for a new colleague enthusiastic to join and strengthen our research, education, and international cooperation activities in the hydroinformatics discipline. Your main project will be the research on “CLimate INTelligence: Extreme events detection, attribution and adaptation design using machine learning” (CLINT), funded by European Commission (H2020 programme), starting July 1st, 2021, with a 4-year duration. This project aims to develop an Artificial Intelligence framework composed of Machine Learning techniques and algorithms to process big climate datasets for improving the detection, causation and attribution of extreme events, including tropical cyclones, heatwaves and warm nights, and extreme droughts, along with compound events and concurrent extremes.

Responsibilities

You will be contributing to the CLINT project through application and further development and testing of state-of-the-art Machine Learning techniques (various types of deep learning artificial neural networks and related techniques, (big) data management and use of High Performance Computing) for improved detection of extreme events, focusing on droughts and tropical cyclones, at sub-seasonal and seasonal scale, building on hydrometeorological ensemble forecast datasets. The developed detection methods will be encapsulated in climate service prototypes, co-designed with end-users and tested pre-operationally across different case studies in Europe and Africa, in particular in the Netherlands and Spain. These climate services will be developed in close collaboration with renowned European institutions within the CLINT project. Contributions to other ongoing research projects on related fields will also be expected, e.g. the value of remote sensing data for modelling climate adaptations. As part of the chair group you will also get the opportunity to contribute to activities related to education and international cooperation in hydroinformatics.

Requirements:

- Affinity with understanding the interrelationships between information and communication technologies, society, and water management;
- A PhD degree in Hydroinformatics or a related discipline (e.g. Hydrology, Civil Engineering, Computer Sciences, Environmental Sciences, Earth Sciences);
- PhD and/or MSc thesis topic on climate services, hydrometeorological forecasting and/or machine learning and data driven modelling is a plus;

- Excellent proficiency in English (written and spoken) is a must; additional language skills in Spanish and Dutch would be of some advantage (but not critical);
- Motivation to work in a multidisciplinary and multicultural environment;
- Readiness to travel for missions abroad.

Experience

- Applying machine learning techniques, modelling of water systems, and hydroinformatics tools;
- Programming and/or script coding in Python, R, or other languages, and in using Machine Learning toolboxes (e.g. TensorFlow, Keras, Pytorch, etc.);
- Analysing hydrometeorological extremes phenomena;
- Data processing and analysis;
- Working with IT and web development is a plus.

Terms of Employment

The candidate will be employed by IHE Delft and stationed in Delft. This is a 1fte (full time) position. The initial contract will be for one year, with the intention to continue for the duration of the CLINT project. Employment at IHE Delft is according to the Collective Labour Agreement Dutch Universities scale 10.

Starting date of the position:

The position starts **1st of September 2021**, earlier if possible.

Information and application

For any questions related to this position please contact either Professor Dimitri Solomatine (head of chair group Hydroinformatics: d.solomatine@un-ihe.org) or Schalk Jan van AnDEL (CLINT project lead for IHE: s.vanandel@un-ihe.org).

Applications (in English) should respond specifically to the requirements and should be sent before **26th of July 2021**, including curriculum vitae, a motivation letter, and the names and contact details of two contactable referees (as one PDF file with your family name as the filename), to IHE Delft, attn. Human Resource Management at recruitment@un-ihe.org, stating vacancy-number **21-HSTI-02**.