

# Brochure

Assistant Professor

Cognitive Radar Signal Processing

July 2022



## Introduction

The faculty of Electrical Engineering, Mathematics and Computer Science (EEMCS) consists of six scientific departments. One of which is within the field of Micro Electronics (ME). It is within ME, that we are looking for an assistant professors Cognitive Signal Processing for the group Microwave Sensing, Signals and Systems (MS3).



We hope that this position will spark your interest. For more information about whom to contact in case of questions, please see the contact details on the last page of this brochure.

Kind regards,

Prof.dr.ir. Lucas van Vliet

Prof.dr.ir. Lucas van Vliet was awarded his doctorate cum laude in Applied Physics, specialising in the development of image analysis methods. He has conducted pioneering research in his field and has co-authored more than 200 academic publications and supervised over 60 doctoral candidates. As of 2021 he has been appointed as dean of EEMCS.

## Assistant Professor Cognitive Radar Signal Processing

**Challenge:** *Embedding cognitive processes into radar remote sensing.*

**Change:** *Closed-control loop in radar signal processing.*

**Impact:** *A multifaceted approach to health care and environmental challenges.*

### Job description

At TU Delft's Microwave Sensing, Signals and Systems (MS3) group, you'll be working at the forefront of research into cognitive systems and remote sensing. The resulting applications range from long-term medical monitoring of elderly people, helping them remain in their homes longer, to enabling autonomous driving. The broad spectrum of applications includes also radar meteorology, sea state monitoring, subsurface sensing, bird species classification at wind farms and some others.

As Assistant Professor you will conduct scientific research, developing your vision and your scientific domain. You'll grow your team to three or four PhD students whom you'll be supervising to completion. For your research you'll build your network of industrial partners and attract funding. You'll be increasingly involved in teaching and supervising master's students and possibly bachelor's students. And you'll develop academically challenging courses, helping us continuously improve our curriculum.

You'll join our highly-motivated, supportive and cohesive team of professors, teachers, technicians, PhD students and master's students. We will give you all the support you need to evolve in your tenure-track position, as we're used to growing talent at various academic levels. At MS3, you'll find a welcoming, friendly and open atmosphere. And we're proud of having Europe's leading radar infrastructure at our disposal! Our facilities include the fully reconfigurable polarimetric wideband radars PARSAX and MESEWI, our antenna measurement chamber DUCAT and our millimetre-wave and UWB radar indoor laboratory.

### Requirements

You thrive on generating and realising ground-breaking research, which you may demonstrate by e.g. embedding your ideas into operational radar systems, demonstrating their added value in applications, publishing and patenting your ideas. Leveraging your communication skills, you'll connect with colleagues throughout the Faculty, helping us make our Faculty as a whole stronger. You also have the ability to build relevant networks and attract funding. In addition, you enjoy teaching and supervising students. Though our research is geared to benevolent purposes, we are operating in the field of dual use research, which is why this role is open to non-sensitive country nationals only.

You also have:

- A PhD in electrical engineering, physics or applied mathematics.
- Demonstrable research experience in one or more relevant fields, such as remote sensing, radar, sonar, ultrasound or telecommunication, and a drive to work and learn in this multidisciplinary domain.
- Have a proven track record in your research field, as evidenced by refereed publications in top quality journals.
- Show the potential to be an inspired and dedicated teacher.
- An excellent command of English, as TU Delft is an internationally diverse community.

If you feel this role would be a perfect match, but you cannot as yet tick all the boxes, we'd really like to get to know you, as you can learn and grow on the job!

## Conditions of employment

This position is offered for 6 years. After a maximum of 5 years it will be determined whether you will be offered a permanent faculty position, based on the performance indicators agreed upon at the start of the appointment. We expect that you have the potential to grow towards an Associate Professor and/or Full Professor role in the future.

Inspiring, excellent education is our central aim. If you have less than five years of teaching experience, the TU Delft UTQ programme will be provided to you in order to obtain a University Teaching Qualification (UTQ) within three years. TU Delft sets high standards for the English competency of the teaching staff. The TU Delft offers training to improve English competency. If you do not speak Dutch, we offer courses to learn the Dutch language within three years.

Salary and benefits are in accordance with the Collective Labour Agreement for Dutch Universities. The TU Delft offers a customisable compensation package, a discount on health insurance and sport memberships, and a monthly work costs contribution. Flexible work schedules can be arranged. For international applicants we offer the [Coming to Delft Service](#) and Partner Career Advice to assist you with your relocation. An International Children's Centre offers childcare and there is an international primary school.

## TU Delft

Delft University of Technology (in Dutch: Technische Universiteit Delft) is the largest and oldest Dutch public technological university, located in Delft, The Netherlands. As of 2019, it is ranked in the top 20 of the best universities for engineering and technology worldwide and is the highest-ranked university in the Netherlands.

TU Delft is built on strong foundations. As creators of the world-famous Dutch waterworks and pioneers in biotech, TU Delft is a top international university combining science, engineering and design. It delivers world class results in education, research and innovation to address challenges in the areas of energy, climate, mobility, health and digital society. For generations, our engineers have proven to be entrepreneurial problem-solvers, both in business and in a social context.

At TU Delft we embrace diversity as one of our core values and we actively engage to be a university where you feel at home and can flourish. We value different perspectives and qualities. We believe this makes our work more innovative, the TU Delft community more vibrant and the world more just. Together, we imagine, invent and create solutions using technology to have a positive impact on a global scale. That is why we invite you to apply. Your application will receive fair consideration.

Challenge. Change. Impact!

## Faculty Electrical Engineering, Mathematics and Computer Science

The Faculty of Electrical Engineering, Mathematics and Computer Science (EEMCS) brings together three disciplines. Combined, they reinforce each other and are the driving force behind the technology we use in our daily lives. Technology such as the electricity grid, which our faculty is helping to make future-proof. We are also working on a world in which humans and computers reinforce each other. We are mapping out disease processes using single cell data, and using mathematics to simulate gigantic ash plumes after a volcanic eruption. There is plenty of room here for ground-breaking research. We educate innovative engineers and have excellent labs and facilities that underline our strong international position. In total, more than 1.100 employees and 4.000 students work and study in this innovative environment.

Click [here](#) to go to the website of the Faculty of Electrical Engineering, Mathematics and Computer Science.

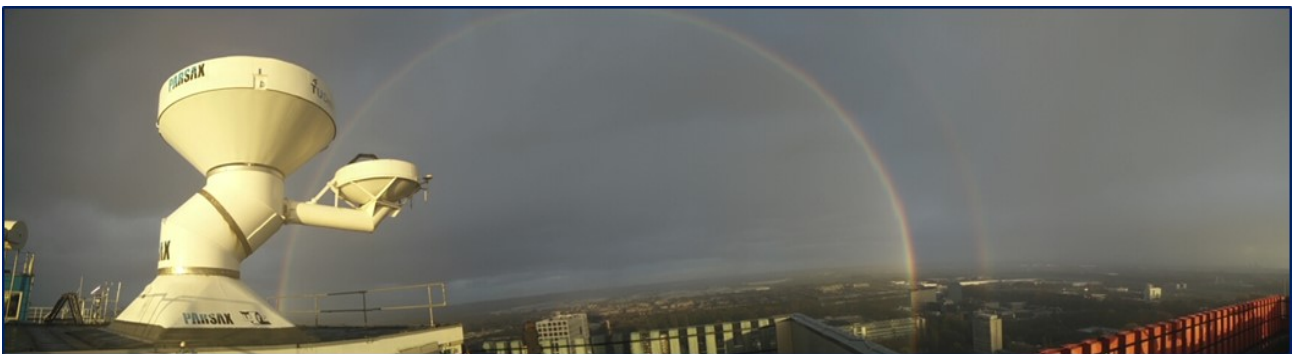


## The department Microelectronics (ME)

The department Microelectronics focuses on microelectronics, microfabrication, signal processing, radar, and microwave systems. The research is clustered in three main themes: Health and Well-Being, Next-Generation Communication and Sensing, and Autonomous Sensor Systems. The department's activities are highly multi-disciplinary, involving innovative combinations of device physics, material science, and chemistry, on the one hand, with signal processing, circuit, and system design, on the other. They are also multidisciplinary about their scope of applications, as they play a crucial role in nearly all fields of innovation, ranging from advanced health care to telecommunications and smart grids

## The group Microwave Sensing, Signals and Systems (MS3)

The Microelectronics department concentrates its research on innovative radar concepts and cognitive radar signal processing for numerous microwave sensing applications. The MS3 group is an internationally leading group regarding target detection and classification with high-resolution radars. Our researchers and students are advancing the state of the art in electromagnetic target modelling, dedicated antenna systems, radar signal and data processing. We proudly operate Europe's best radar infrastructure in academia.



### More information about MS3:

- [The department](#)
- [The group](#)

## TU Delft and surroundings

TU Delft is the largest technical university in the Netherlands. Our 8 faculties offer 16 bachelor's and more than 30 master's programmes to more than 27,000 students. Our 6000 employees share a fascination for science, design and technology. Together we want to create an impact on a better society. Our campus is located in the South of Delft.

More information about the available research facilities can be found [here](#).



## Delft

The quaint inner city of Delft is about a 10 minute bike ride from campus and within walking distance from the train station. The Hague, Rotterdam and Leiden are all within 10-20 minutes by train, while Amsterdam is less than an hour away. The nearest airports are [Rotterdam The Hague, Schiphol](#) (Amsterdam) or [Eindhoven](#).

## Contact information



For questions regarding the position with the MS3 group, please contact Prof. DSc. Olexander Yarovyi at [A.Yarovoy@tudelft.nl](mailto:A.Yarovoy@tudelft.nl) or +31-15-2782496.

## More information

[TU Delft](#)

[Faculty EEMCS](#)

[The people at EEMCS](#)

[DEWIS, women's network of scientists at the TU Delft](#)