



Assistant Professor in Signal Processing

Department of Signal Processing and Acoustics

School of Electrical Engineering



Aalto University



Aalto University

Aalto University is a multidisciplinary community of bold thinkers where science and art meet technology and business.

Aalto University is a university where research, art and education are promoted hand in hand. We are committed to **identifying and solving grand societal challenges** and building an innovative future.

With high-quality research we aim at creating significant impact on the international scientific community, industry and business, as well as the society at large. Disciplinary excellence is combined with **multidisciplinary** activities, engaging both students and the local innovation ecosystem.

Aalto has with nearly 11 000 students and more than **six schools** an 400 professors. We are an international community: more than 40% of our academic personnel have an international background.

Aalto University was **founded in 2010** as three leading Finnish universities, Helsinki University of Technology, the Helsinki School of Economics and the University of Art and Design Helsinki, were merged. Our campuses are located in Espoo and Helsinki, Finland.

The University campus in Espoo is developing into a unique, open innovation hub and a center of collaboration that attracts partners from all around the world. It encourages sharing of ideas, interdisciplinary encounters, creativity, growth and entrepreneurship. The core of the campus will be a vibrant city with versatile services and attractive places to meet.

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Aalto University

More info at
aalto.fi

A photograph of two men in white lab coats in a laboratory setting. The man on the right is holding up a small, dark, rectangular device with a grid-like pattern and some wires attached. The man on the left is smiling. The background is a dark, textured wall, possibly an anechoic chamber.

School of Electrical Engineering

At the School of Electrical Engineering, science and engineering meet society.

Our portfolio covers fields from natural sciences to engineering and information sciences. In parallel with basic research, we develop ideas and technologies further into innovations and services. We are **experts in systems science**: we develop integrated solutions from care of the elderly to space robotics.

Our school has about **2000 students**, approximately 50 doctor's and about 250 master's degrees are completed annually. There are **600 members of academic staff** at the School, of which 60 are professors.

The School's **five departments** cover the fields of electronics, communications and automation. Special fields include automation and systems technology, electronics and information technology, power engineering, communications engineering and bioinformation technology.

The novel research results and systems solutions require committed researchers, hard-working students, modern research infrastructure, and an excellent support organization. Our international and close-knit community is one of our strengths.

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Aalto University
School of Electrical
Engineering

More info at
elec.aalto.fi



Department of Signal Processing and Acoustics

Overview

The [Department of Signal Processing and Acoustics](#) (SPA) combines competence in different areas of research fields in signal processing, acoustics, speech, and measurements. The research teams are led by 12 professors and one professor of practice. The research groups are:

- Signal Processing
- Speech Communication Technology
- Speech Recognition
- Speech Interaction Technology
- Audio Signal Processing
- Communication Acoustics
- Virtual Acoustics
- Sound In Virtual Reality
- Metrology Research Institute

Signal Processing

The goal of The Signal Processing Research Group is to do world-class signal processing research by focusing on fundamental signal processing theory and methods for multivariate and multidimensional signals and distributed systems.

The group has an extensive network of collaborators from world leading research universities in the Americas, Europe and Asia. Also, world-class researcher training is provided to our diverse group of doctoral students. The research group is led by Professor Visa Koivunen. Others involved are Professor Sergiy Vorobyov, Professor Risto Wichman and Professor Esa Ollila

Studies

The Department of Signal Processing and Acoustics contributes to the common Bachelor programmes of the School of Electrical Engineering, contribute arranging the Master's Programme in Computer, Communication and Information Sciences, especially majors Acoustics and Audio Technology and Speech and Language Processing. We also provide post-graduate education through all of our research groups, as can be seen in our Doctoral dissertations.



Assistant Professor in Signal Processing (tenure)

Signal processing is the enabling technology for the generation, transformation, and interpretation of information touching our daily lives in a myriad of ways. It comprises the theory, algorithms, and applications related to processing information contained in many different formats broadly designated as signals. Signal processing uses mathematical, statistical, and computational methods, modeling techniques and algorithms for generating, transforming, transmitting, and learning from signals.

The subfields within signal processing are numerous. The call is in broad area of signal processing with special emphasize on:

- Signal processing theory and methods
- Signal processing for communications and networking, joint sensing and communication
- Machine learning for signal processing
- Sensor array and multichannel signal processing, radar signal processing
- Signal processing for data science
- Information forensics and security
- Software, circuits and systems for signal processing

We are seeking outstanding individuals who have demonstrated excellence in addressing the above challenges. As a tenure-track faculty member, you are expected to complement the expertise of the current faculty by bringing new ideas and perspectives into our community. You are also expected to teach signal processing courses in master's and bachelor's programmes with a typical teaching load of two courses per years.

Your experience and ambitions

We are looking for applicants with

- A doctorate in signal processing or related field
- A proven ability to carry out high quality research and publish in top venues of the discipline
- Potential to attract research funding and build up your own research group
- An interest to collaborate with industry
- Ability to build a high-level international collaboration network
- Motivation to teach at undergraduate and/or graduate levels

We offer

- A tenure track position with promotion to tenured position based on merits
- A competitive benefits package including access to health care
- Start-up funding and grant writing support to help you establish your own group
- Excellent collaboration possibilities within the university
- Great future in one of the happiest, cleanest and safest countries in the world, with comprehensive social security system and free education up to university level

Aalto tenure track

This position belongs to our tenure track system and will be filled to the assistant professor level. The salary is based on Aalto University salary system, but you can also provide your own salary requests. Getting tenure and advancement on Aalto tenure track is based on an evaluation of your achievements and merits against the Aalto tenure track criteria. Please see the details about the tenure track path at Aalto at <https://www.aalto.fi/en/tenure-track/tenure-track-career-path> and evaluation criteria at <https://www.aalto.fi/services/tenure-track-evaluation-criteria>.

Scientific environment

The position is situated in the Department of Signal Processing and Acoustics at the Aalto University School of Electrical Engineering. The department conducts world-class research in four research areas and groups: Signal processing, speech processing, acoustics and audio signal processing, and metrology. The Signal Processing group focuses on statistical and array signal processing, wireless communication, optimisation, machine learning, radar and multisensor systems. The department has 12 professors, 4 of whom are IEEE Fellows. Our department's professorial faculty has been extremely successful in attracting funding from academic, industrial and defence sources. The department has an extensive and active network of collaborators in world-leading academic institutes and industrial

research groups. There are very strong research groups in the areas of Communication Engineering, Radio Engineering and Circuit Design within the School of Electrical Engineering, providing a critical mass of knowledge for large scale cross-disciplinary research projects.

How to apply

Please submit your application latest on June 18, 2021 through our recruiting system by using the "Apply now!" link below. Please include the following pdf documents in English:

1. Cover letter
2. Curriculum vitae (with contact information and the Researcher ID number)
3. List of publications with the 7 most significant highlighted
4. Research statement describing past research and plans for future research
5. Teaching portfolio describing teaching experience and plans for teaching
6. References from no more than 2 individuals

The application materials should be addressed to the president of Aalto University. The application materials will not be returned. General instructions for applicants including languages requirements and guidelines for compiling the teaching portfolio and CV are at <https://www.aalto.fi/en/tenure-track/interested-in-joining-our-tenure-track>

Selected candidates will be invited to the Department of Signal Processing and Acoustics and to Aalto University's Otaniemi campus in August-September 2021. The short-listed candidates' applications will be submitted for review by external international experts. Selected candidates will, with their consent, be subject to an aptitude assessment.

More information

If you wish to hear more about the position or us, please contact Professor Risto Wichman (risto.wichman@aalto.fi). In case you have questions related to the recruitment process, please contact HR Coordinator Alina Järvinen (alina.jarvinen@aalto.fi). Aalto University reserves the right for justified reasons to leave the position open, to extend the application period and to consider candidates who did not submit applications within the application period.



Working at Aalto University

Why join us?

Established in 2010 as a merger of three leading Finnish Universities, we are both **challenger of the old, and traditional with strong history** and legacy.

Our unique combination of fields in **art and design, technology and business enable multi-disciplinarity** and finding clever solutions for the world's most wicked problems in the interfaces of these fields.

We aim for **societal impact**, educating game changers to drive sustainability.

We enjoy working at our evolving **collaborative campus close to the heart of Helsinki**, with good connections, great architecture and amazing nature.

We are **international and diverse**: more than 40 % of our faculty comes from outside of Finland. Our working environment is multi-cultural, widely English-speaking and its easy to settle in, despite of wherever you come from.

We have strong [academic standing and reputation in our key fields](#) – Aalto University is among top 10 of New Universities in the world (QS ranking). **(Add here relevant rankings to your unit /School)**

Our **well-functioning and fair Tenure Track career system** enables building a successful academic career, providing support for fulfilling your professional ambitions.

Please add relevant evidence of unit's and School's success!



Living in Finland

Finland is [among the best countries in the world](#) according to many quality of life indicators, including being the [happiest country in the world \(UN study 2018\)](#).

We are humble people, but dare to say we have **one of the most advanced education systems in the world**.

The Nordic values of **equality and co-operation** are rooted deeply into our society. We are one of the world's top countries in press freedom and consider the many voices in our society a strength.

With high investments in R&D, a strong innovation culture, open data and advanced state of digitalization, we are a nation of **innovation and entrepreneurship**.

Gender equality, flexibility and low hierarchy are at the core of our **Nordic working environment**. Professional ambitions can be combined with a fulfilling personal life.

We are one of the world's most **reliable and stable** nations with low levels of corruption and high level of safety. We are proud to provide exceptionally high standards of social security and healthcare, financed by the state.

Having four distinct seasons, clean air and thousands of lakes, we are some nature-loving people and take good care of our **unique environment**. We enjoy our midnight sun in the summer and northern lights in the winter.

Finnish language is known to be a bit on the complicated side, but don't worry, we Finns are fluent in English, and have an **international mindset**.

We have **wide and reliable transport networks**, with Helsinki airport serving over 100 direct destinations. The comprehensive public transport makes it easy to commute. Our campus is situated within a 10 minute metro ride from the heart of Helsinki.

Want to live in the best country in the world?

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**Aalto University –
a community of
game changers**
aalto.fi



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