

Postdoctoral or Doctoral Researcher in statistical signal
processing
Aalto University

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Posted Sep. 8, 2025, set to expire Jan. 5, 2026

Job Title	Postdoctoral or Doctoral Researcher in statistical signal processing
Department	T412 Department of Information and Communications Engineering
Institution	Aalto University , , Finland
Date Posted	Sep. 8, 2025
Application Deadline	Open until filled
Position Start Date	Available immediately
Job Categories	Post-Doc
Academic Field(s)	Engineering - Other Electrical and/or Electronics Engineering Physics
Job Website	https://aalto.wd3.myworkdayjobs.com/aalto/job/Otaniemi-Espoo-Finland/Postdoctoral-or-Doctoral-Researcher-in-statistical-signal-processing_R44170-5

Apply By Email

Job Description

Aalto University is where science and art meet technology and business. We shape a sustainable future by making research breakthroughs in and across our disciplines, sparking the game changers of tomorrow and creating novel solutions to major global challenges. Our community is made up of 120 nationalities, 14 000 students, 400 professors and close to 5000 faculty and staff working on our dynamic campus in Espoo, Greater Helsinki, Finland. Diversity is part of who we are, and we actively work to ensure our community's diversity and inclusiveness. This is why we warmly encourage qualified candidates from all backgrounds to join our community.

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The Department of Information and Communications Engineering is now inviting applications for a Postdoctoral or Doctoral Researcher in statistical signal processing.

The Structured and Stochastic Modeling Group, headed by Prof. Filip Elvander, conducts research in statistical signal processing, ranging from investigating fundamental properties of the mathematical descriptions of signals, to applied research in array signal processing. We are now looking for an outstanding Doctoral Researcher or Postdoctoral Researcher to join the group.

The research project is concerned with the challenging problem of modeling the complex modern radio environment, where a diverse set of devices and agents share the available spectrum. In this environment, it is crucial to understand the spatio-temporal radio characteristics, i.e. what, when, and from where signals are transmitted. Applications of the envisioned research results include cognitive and adaptive spectrum use as well as localization of targets or signal sources in passive-sensing settings. This is central to future 6G wireless communications applications, where radio-frequency sensing and data transfer (ISAC) are integrated into the same devices.

The research project is part of a larger consortium, gathering world-class researchers in remote sensing with expertise ranging from estimation and optimization theory to hardware design. The specific topic of the project falls in the intersection of statistical signal processing and applied mathematics and is in particular concerned with optimal transport for inverse problems.

Optimal transport for inverse problems

One of the central topics of the research projects is the further development of theory and methods for the concept of optimal transport for inverse problems. Optimal transport is concerned with the mathematical problem of comparing and interpolating distributions of mass, for example probability distributions. The concept has lately gained increasing interest from researchers in applied mathematics and machine learning. This is due to its remarkable flexibility, mathematical elegance, and as it has produced state-of-the-art results in many applications. As a leading expert on the use of optimal transport theory in inverse problems, Prof. Elvander is working towards making the framework a powerful tool for applications in signal processing and control.

Your role and goals

As a researcher in this project, you will work on mathematical models for describing the radio environment and to design algorithms for estimating, for example, the location and spectral characteristics of signal sources based on measurements collected from antenna arrays. In the project, a cornerstone will be the use of theory and methods from optimal mass transport and convex modeling. The goal of the project is to make foundational theoretical contributions and to develop tools

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relevant for industry applications.

The Doctoral Researcher's position includes also doctoral studies. The successful applicant must apply for the study right in doctoral studies at Aalto University School of Electrical Engineering. The nominal duration of the doctoral studies in Finland is 4 years.

Your experience and profile *

For Doctoral Researcher position: MSc in Applied Mathematics, Engineering Physics, Electrical Engineering, or related field. *

For Postdoctoral Researcher position: PhD in Applied Mathematics, Engineering Physics, Electrical Engineering, or related field. *

A good command of English, both written and spoken. *

Good programming skills in languages such as Matlab and Python. *

A curious mindset. *

An interest in multi-disciplinary research. *

Experience in scientific publishing. *

For Doctoral Researcher position: Eligible for PhD study at Aalto University. Please see the student information and admission criteria at [[url=https://www.aalto.fi/en/study-options/aalto-doctoral-programme-in-electrical-engineering](https://www.aalto.fi/en/study-options/aalto-doctoral-programme-in-electrical-engineering)]<https://www.aalto.fi/en/study-options/aalto-doctoral-programme-in-electrical-engineering>. *

For Postdoctoral Researcher position: Ability to provide guidance and mentorship to doctoral researchers.

What we offer

The Department of Information and Communications Engineering conducts world-class research in statistical signal processing. We offer a diverse and multi-cultural workplace with strong international ties. As the research project is part of a larger consortium, you will benefit from the expertise of a range of world-leading researchers, as well as a community of doctoral and post-doctoral researchers working towards the same overarching goal.

The starting date is 1.1.2026, or as mutually agreed.

The Doctoral Researcher position will be filled for four years (2+2). The salary is determined according to the salary system of Finnish universities. The starting salary for Doctoral Researcher is 3075 €/month.

The Postdoctoral Researcher position will be filled for 2+1 years. The salary is determined according to the salary system of Finnish universities. The starting salary for Postdoctoral Researcher

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is approximately 4100 €/month.

As an employer, Aalto University provides excellent learning and development opportunities as well as occupational health care services, commuter ticket benefit and sport activities offered by Unisport.

Ready to apply?

To apply for the position, please submit your application including the attachments mentioned below as one single PDF document in English through our online recruitment system by using the link ("Apply Now") on Aalto University's web page. Your application should contain *

Letter of motivation including a brief description of your research interests. *

CV including list of publications *

Degree certificates and academic transcripts, for Postdoctoral Researcher's position including also Doctoral Degree Certificate (or information about defence, if defending soon) *

Contact details of at least two referees (or letters of recommendation, if already available)

The deadline for applications 26 October, 2025. Note that the position will be filled as soon as a suitable candidate is identified, possibly already during the application period. Please note: Aalto University's employees should apply for the position via our internal HR system Workday (Internal Jobs) by using their existing Workday user account (not via the external webpage for open positions). If you are a student or visitor at Aalto University, please apply with your personal email address (not aalto.fi) via [[url=https://www.aalto.fi/en/careers-at-aalto](https://www.aalto.fi/en/careers-at-aalto)]Aalto University open positions

For additional information, kindly contact Prof. Filip Elvander at filip.elvander@aalto.fi. For additional information in recruitment process related questions, please contact HR Advisor Johanna Haapalainen, hr-elec@aalto.fi.

Read more about working at Aalto: [[url=https://www.aalto.fi/en/careers-at-aalto](https://www.aalto.fi/en/careers-at-aalto)]<https://www.aalto.fi/en/careers-at-aalto>

Check out our new virtual campus experience: [[url=https://virtualtour.aalto.fi](https://virtualtour.aalto.fi)]<https://virtualtour.aalto.fi>

About Finland

Finland is a great place for living with or without family - it is a safe, politically stable and well-organized Nordic society. Finland is consistently ranked high in quality of life and was listed again as the happiest country in the world: [[url=https://worldhappiness.report/news/world-happiness-report-2025-people-are-much-kinder-than-we-expect-research-shows/](https://worldhappiness.report/news/world-happiness-report-2025-people-are-much-kinder-than-we-expect-research-shows/)]World Happiness Report 2025

For more information about living in Finland: [[url=https://www.aalto.fi/en/careers-at-aalto/for-](https://www.aalto.fi/en/careers-at-aalto/for-)

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international-staff]Aalto Careers for International Staff.

Contact Information

Please reference Academickeys in your cover letter when
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Contact

Finland