

Doctoral Researcher positions in developing spatial super-hearing techniques
Aalto University

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Posted Feb. 28, 2025, set to expire Dec. 31, 2025

Job Title	Doctoral Researcher positions in developing spatial super-hearing techniques
Department	T412 Department of Information and Communications Engineering
Institution	Aalto University , , Finland
Date Posted	Feb. 28, 2025
Application Deadline	Open until filled
Position Start Date	Available immediately
Job Categories	Graduate Student
Academic Field(s)	Electrical and/or Electronics
Job Website	https://aalto.wd3.myworkdayjobs.com/aalto/job/Otaniemi-Espoo-Finland/Doctoral-Researcher-positions-in-developing-spatial-super-hearing-techniques_R42470

Apply By Email

Job Description

Aalto University is a community of bold thinkers where science and art meet technology and business. We are committed to identifying and solving grand societal challenges and building an innovative future. Aalto has six schools with nearly 11 000 students and a staff of more than 4 000, of which 400 are professors.

Aalto University School of Electrical Engineering, Department of Information and Communications Engineering are looking for two doctoral researchers in Prof. Ville Pulkki's Communication acoustics group in

Ultrasonic echolocating spatial superhearing as assistive technology for visually impaired

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Underwater active and passive spatial superhearing for divers

The project is funded by the Jane and Aatos Erkko foundation. The main direction for the project is in developing spatial super-hearing techniques [1] for echolocating and passive applications in air and in water. Towards the end of the project also the applications of super-hearing in electromagnetic and ionizing radiation fields will be researched, if possible.

Proof-of-concept devices would be built in the project, consisting of microphone arrays, electronics for connecting the microphones to [miniature] computers, and software running on standard operating systems. The devices would be built based on the devices built earlier in the laboratory. Spatial super-hearing technologies would be developed, for example for targeting applications giving the user a clear echolocation capability of localizing obstacles in surrounding environment.

What we expect

The student should have knowledge in acoustics and audio technology in general. As the topic matter is quite broad, several researchers with different expertise's are planned to work on the project. Please report any experience you have digital signal processing, building audio devices, acoustical measurements, programming audio applications, of MEMS microphones, design of digital boards, and running subjective tests.

In underwater applications the devices would have to be tested in pools, and possibly also in real conditions. Please report also swimming and diving skills.

A MSc degree in preferably electrical engineering or similar is assumed. However, if you are a MSc student in Aalto University MSc major Acoustics and audio technologies, the position could be a combined as an MSc project + PhD project.

What we offer

The doctoral researcher positions are fixed-term positions, and the first contract will be made for two years. Currently, the starting salary for doctoral researchers is 3000 EUR per month. The preferred starting date of the position is 1st September 2025, but we are open to discussing alternative start dates with the selected candidate. We expect the candidate to work at the premises of Aalto University.

Doctoral studies at Aalto University take four years and, in addition to a work contract, you need to apply for a doctoral student position at the Aalto Doctoral Programme in Engineering. Please check the 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>.

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As an employer, Aalto University provides excellent learning and development opportunities as well as occupational health care services, versatile exercise services, and other employee benefits.

Join us!

To apply for the position, please submit your application electronically through our online recruitment system and provide the following documents in English: * Letter of motivation * CV * Degree certificates and academic transcripts

The deadline for applications is March 16th 2025, at 23:59 Finnish time (UTC +2) and the position will be filled as soon as possible.

Aalto University reserves the right for justified reasons to leave the position open, to extend the application period, and reopen the application process.

Please note: Aalto University's employees and visitors should apply for the position via the internal HR system Workday (Internal Jobs -> Find Jobs) by using their existing Workday user account.

Further information

For additional information, please contact Professor Ville Pulkki ,
[url=mailto:ville.pulkki@aalto.fi]ville.pulkki@aalto.fi. In questions related to the recruitment system, please contact [url=mailto:hr-eng@aalto.fi]hr-eng@aalto.fi

Contact Information

Please reference Academickeys in your cover letter when applying for or inquiring about this job announcement.

Contact

Finland