

Postdoctoral Researcher for developing quantum
computing algorithms
Aalto University

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Posted Apr. 2, 2025, set to expire Dec. 31, 2025

Job Title	Postdoctoral Researcher for developing quantum computing algorithms
Department	T411 Dept. Electronics and Nanoeng
Institution	Aalto University , , Finland
Date Posted	Apr. 2, 2025
Application Deadline	Open until filled
Position Start Date	Available immediately
Job Categories	Post-Doc
Academic Field(s)	Electrical and/or Electronics Computer Engineering
Job Website	https://aalto.wd3.myworkdayjobs.com/aalto/job/Otaniemi-Espoo-Finland/Postdoctoral-Researcher-for-developing-quantum-computing-algorithms_R42849

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 other 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.

The School of Electrical Engineering is one of the six schools of Aalto University. Our portfolio covers fields from natural sciences to engineering and information sciences. In parallel with basic research,

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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.

We are now looking for a post doc to work on developing quantum computing algorithms.

Postdoctoral researcher

Are you as excited about quantum computing and its future applications as we are?

We are now looking for a postdoctoral researcher to support the Micro and Quantum Systems (MQS) research group in developing various quantum computing schemes at Aalto University's Electronics and Nanoengineering department. In this position you will have a chance to make a real impact by high-quality research and by supervising doctoral students. Join us in shaping the future!

Your role and goals

Your primary task as a postdoc is to conduct research into quantum algorithms and information. You are expected to take an active role in advancing the research projects of the MQS group. Our recent research has focused on the theory and applications of variational quantum algorithms and quantum machine learning. Theoretical research into the capabilities of quantum computing and quantum advantage is also a prospective topic, especially in relation to cryptography. The exact research topics can be adjusted within the limits set by our current projects according to the interests of the applicant. Your goal in research will be to produce world-class results, in collaboration with the other group members, and publish them in high-impact journals.

In addition to research, you will also be expected to take part in the supervision of PhD students and the teaching activities of the research group.

Your network and team

Currently, our research group consists of 1 professor, 1 lecturer, 1 staff scientist and 5 PhD students. The group is led by Professor Ilkka Tittonen.

Your experience and ambitions

Applicants are expected to * hold a PhD and excellent study records in theoretical physics, mathematics, computer science, or other relevant field. * have sufficient background in quantum computing to conduct research on the topic. * have a demonstrated ability for independent and collaborative research on advanced topics. * have a working proficiency in English. (Finnish language is not required.)

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The research responsibilities can be adjusted according to the background of the applicant. Familiarity with cryptography is a definite advantage. Teaching experience will also be a valuable asset.

What we offer

We offer the applicant the opportunity to conduct research in a vibrant and active international community. Aalto University also offers ample opportunities for multidisciplinary research and teaching collaboration. The work assignments must be carried out in Finland.

We have a flexible, modern work culture. We value work-life balance and well-being in all areas of life.

We offer you interesting work in an inspiring work environment. You will work in a community of students, researchers and other professionals, where we promote socially significant goals in the fields of science and education. We will familiarize you with your tasks and you will become part of a friendly and competent team that will offer you support in your work tasks also in the future. We encourage and offer opportunities for continuous development of your own expertise.

We strive to combine the best aspects of remote and local working and we have flexible working hours. Your local workplace is located in the renewed and vibrant Otaniemi campus area, which has diverse services and good transport connections along the metro and major roads.

Join us!

To apply, please share the following application materials with us through our recruitment site ("Apply now!"). All materials must be submitted in English and in PDF format, a maximum of five (5) files, each no larger than 5MB. * CV (including a list of publications) * Motivation letter * Recommendation letters (max. 2, if available)

Please apply as soon as possible, at the latest April 16th, 2025. We will go through applications, and we may invite suitable candidates to interview 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). Aalto University's students and visitors should apply as external candidates with personal (not aalto) email.

For more information regarding the open position, please contact professor Ilkka Tittonen, [[url=mailto:ilkka.tittonen@aalto.fi](mailto:ilkka.tittonen@aalto.fi)]ilkka.tittonen@aalto.fi and University Lecturer Matti Raasakka [[url=mailto:matti.raasakka@aalto.fi](mailto:matti.raasakka@aalto.fi)]matti.raasakka@aalto.fi In any question regarding the recruitment process, please contact HR Advisor Monika Mäkinen, [[url=mailto:hr-elec@aalto.fi](mailto:hr-elec@aalto.fi)]hr-elec@aalto.fi.

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Finland