Doctoral Researcher in the field of computational analysis of large data sets relevant to renewable fuels
Aalto University

Job Title	Doctoral Researcher in the field of computational analysis of large data sets relevant to renewable fuels
Department	T212 Mechanical Engineering
Institution	Aalto University , , Finland
Date Posted	Sep. 17, 2024
Application Deadline	Open until filled
Position Start Date	Available immediately
Job Categories	Graduate Student
Academic Field(s)	Mechanical Engineering
Job Website	https://aalto.wd3.myworkdayjobs.com/aalto/job/Otaniemi-Espoo-Finland/Doctoral-Researcher-in-the-field-of-computational-analysis-of-large-data-sets-relevant-to-renewable-fuels_R40869
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 13 000 students, 400 professors and close to 4 500 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.

Circular Materials Bioeconomy Network (CIMANET) is an interdisciplinary doctoral education network to support the renewal of the bio-based industry through new sustainable materials and processes.

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CIMANET is part of the doctoral education pilot program established by Finland's Ministry of Education and Culture, providing scientific and technological competences to promote sustainable growth. It strengthens the knowledge base required to enhance the Finnish forest and bio-based industry with novel solutions unveiling the full potential of biomass. CIMANET consists of nine universities: Aalto University, Hanken School of Economics, LUT University, Tampere University, University of Helsinki, University of Jyväskylä, University of Oulu, University of Turku, and Åbo Akademi University.

CIMANET operates in close collaboration with the industry, research organizations, as well as other stakeholders to create economic and societal impact by addressing the major challenges of our century: resource sufficiency, access to clean water, and climate change. CIMANET has started in 2024 and will provide altogether 67 doctoral researchers funding for three years. Check out all the open positions at the CIMANET pilot website.

We are now looking for a

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We are looking for a doctoral researcher to manage large data sets with numerical tools, especially with machine learning methods. In this position you will have a chance to make an impact by developing methods and tools for the analysis of renewable fuels in cold climate environment. Especially, you will analyze new renewable fuels from lignocellulosic residues and predict their cold properties by ML methods. Join us in shaping the future fuels !

Scientific environment
You will be working in a computationally oriented team at the School of Engineering together with Neste corp. chemists and engineers. Prof. Kaario has a computational team of 10 persons focusing on renewable and carbon free fuels using numerical methods. The environment is inspiring for a modeler as support and discussions are easy to find. Part of the work is done at Neste especially related to the large data sets on new fuels. We have recently published some relevant papers regarding the present position, e.g. Gonsalez et al., 'Prediction of Gasoline Blend Ignition Characteristics Using Machine Learning Models', Energy & Fuels 2021, and Cheng et al., 'Optical Investigation of the Diesel Spray Characteristics and Spray Geometry Prediction Model by Artificial Neural Network', SAE 2023.

Your role and goals
The role of the Phd student is to collect large data sets from renewable fuels and analyze the data with machine learning methods. The goal is to find connections in the data that can be linked to the cold properties of the fuels. This will lead to breaktrough publications highlighting the impact of the work.

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Your experience and ambitions
The applicant should have a good track-record of computational methods with additional background knowledge in some of the following topics: *
Matlab, Python, and other programming languages *
Experience using ML methods *
Publications on a relevant field

An applicant must have completed by 31 December 2024 or preferably earlier (to start employment on 1 January 2025) *
a master’s degree awarded by a university, or *
a study programme that in the awarding country gives eligibility for doctoral level studies

A good command of English is required, Finnish language is not.

Applicants must fulfill the admission criteria of the Aalto Doctoral Programme and, if chosen for a position, apply for, obtain and accept the right to pursue doctoral studies at Aalto University. For more information on the general requirements and the application process for doctoral studies, please visit [url=https://www.aalto.fi/en/doctoral-education/how-to-apply-for-doctoral-studies]https://www.aalto.fi/en/doctoral-education/how-to-apply-for-doctoral-studies .

What we offer *
Opportunity to work in a dynamic community of world-class researchers and professionals where students are rigorously selected and highly motivated. This leads to an exceptionally interactive and intellectually challenging atmosphere at Aalto. *
We have a flexible modern work culture. We value the balance and well-being of work and leisure in all aspects of life. *
We offer you an interesting job in an inspiring work environment. You will be able to work in a community where we promote socially significant goals in science and education. We will familiarize you with your tasks and you will be part of a nice and competent team that will provide you with support for your work tasks also in the future. We encourage and offer opportunities for continuous development of your own expertise. *
The expected starting date in the position is on 1st January 2025. Presence in Finland for the duration of the contract is compulsory. *
Employment contracts will be made for three years with the funding from the Finnish Ministry of Education and Culture. Contract includes a prequisite to apply, receive and accept doctoral study right within the probation period of the first 6 months. *
The annual workload of research and teaching staff at Aalto University is 1612 hours. *
Aalto University follows the salary system of Finnish universities. The starting salary is approximately

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3000 €/month (gross), and it increases as the Doctoral Researcher progresses in the research and studies. *
The contract includes Aalto University occupational healthcare. Aalto University provides excellent learning and development opportunities, and a commuter ticket benefit. Unisport offers versatile sports facilities and exercise services with a staff discount. *
We work in a hybrid way, and the primary workplace is Otaniemi, Espoo. The Otaniemi campus is a thriving and connected community of 100 nationalities. Life at the transformed campus is vibrant and filled with amazing architecture, calming nature, and a variety of cafes, restaurants, services and good connections along the metro and city train lines. See how the campus looks like on our virtual tour: [url=https://virtualtour.aalto.fi/]https://virtualtour.aalto.fi/

Join us!
To apply, please submit the following application materials through our aalto.fi recruitment site by Monday 7 October 2024 Finnish time. Click “Apply now”.

Please note: Aalto University’s employees should apply for the position via 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.

All material should be submitted in English and in a pdf-file. Application material should include: *
Letter of motivation (max. one page). Please describe your background and future plans, and in particular the reasons for selecting the project(s). *
A curriculum vitae and possible list of publications with complete study and employment history, contact details of referees from 2 senior academic people. We will contact your referees, if recommendation letters are required. (please see CV example [url=https://view.officeapps.live.com/op/view.aspx?src=https%3A%2F%2Ftenk.fi%2Fsites%2Fdefault%2F06%2FTENK_CV_template_2020.docx&wdOrigin=BROWSELINK]TENK_CV_template_2020.docx (live.com)) *
A study transcript provided by the applicant’s university that lists studies completed and grades achieved. *
A copy of the M.Sc. degree certificate or equivalent. (for doctoral study application it will need to be officially translated into Finnish, English or Swedish). If the degree is still pending, then a plan for its completion must be provided. *
Plan for obtaining certificate of English/Finnish/Swedish language knowledge for doctoral study application if position is offered (in order to have it on time for application, see more from [url=https://www.aalto.fi/en/doctoral-education/how-to-apply-for-doctoral-

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studies]https://www.aalto.fi/en/doctoral-education/how-to-apply-for-doctoral-studies)

We will go through applications, and we may invite suitable candidates to interview already during the application period. The position will be filled as soon as a suitable candidate is identified. Chosen candidates should apply for doctoral study right immediately after accepting the position.

Any questions?
For additional information, kindly contact prof. Ossi Kaario or prof. Annukka Santasalo-Aarnio (firstname.lastname(at)aalto.fi). Aalto University reserves the right to leave the position open, extend the application period, reopen the application process, and consider candidates who have not submitted applications during the application period. For questions about applying, please contact HR partner Anna-Maija Harju, who can be reached by e-mail at firstname.lastname(at)aalto.fi .

Want to know more about us and your future colleagues?
You can watch these videos: [url=https://www.youtube.com/watch?v=5k_og_6zUJQ]Aalto University - Towards a better world, [url=https://www.youtube.com/watch?v=dUfEGVM-ZP8&feature=youtu.be]Aalto People , and [url=https://www.youtube.com/watch?v=ZK6pDWm1_CE]Shaping a Sustainable Future.
For more information about living in Finland: [url=https://www.aalto.fi/en/careers-at-aalto/for-international-staff]https://www.aalto.fi/en/careers-at-aalto/for-international-staff .
Read more about working at Aalto: [url=https://www.aalto.fi/en/careers-at-aalto]https://www.aalto.fi/en/careers-at-aalto

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 just listed again as the happiest country in the world: [url=https://finland.fi/life-society/for-seventh-year-running-finland-is-first-in-world-happiness-report-other-nordics-in-top-7/]https://finland.fi/life-society/for-seventh-year-running-finland-is-first-in-world-happiness-report-other-nordics-in-top-7/ . For more information about living in Finland: [url=https://www.aalto.fi/en/careers-at-aalto/living-in-finland]https://www.aalto.fi/en/careers-at-aalto/living-in-finland .

Contact Information

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Contact

Finland