

Doctoral Researcher in Statistical Machine Learning Aalto University

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Posted Jun. 26, 2024, set to expire Dec. 30, 2024

Job Title Doctoral Researcher in Statistical Machine Learning
Department T313 Dept. Computer Science
Institution Aalto University
, , Finland

Date Posted Jun. 26, 2024

Application Deadline Open until filled
Position Start Date Available immediately

Job Categories Graduate Student

Academic Field(s) Computer Science

Job Website https://aalto.wd3.myworkdayjobs.com/aalto/job/Otaniemi-Espoo-Finland/Doctoral-Researcher-in-Statistical-Machine-Learning_R40167

Apply By Email

Job Description

We are looking for a doctoral researcher (PhD student) with a strong mathematical background and/or strong programming abilities to work on statistical machine learning, specifically simulation-based inference (see project description below). The position is based at the [\[url=https://research.cs.aalto.fi/pml/\]](https://research.cs.aalto.fi/pml/)Probabilistic Machine Learning group of the Department of Computer Science at Aalto University, Finland. You will be supervised by [\[url=https://bharti-ayush.github.io/\]](https://bharti-ayush.github.io/)Dr. Ayush Bharti and [\[url=https://kaski-lab.com/\]](https://kaski-lab.com/)Prof. Samuel Kaski. The project involves close collaboration with [\[url=https://fxbriol.github.io/\]](https://fxbriol.github.io/)Assoc. Prof. F-X Briol and his research group on the [\[url=https://fsm1-ucl.github.io/\]](https://fsm1-ucl.github.io/)Fundamentals of Statistical Machine Learning at University College London (UCL), including funding for research visits to UCL. There are also opportunities to collaborate with other groups in the [\[url=https://fcai.fi/calendar/2022/2/23/turing-fcai-meetup\]](https://fcai.fi/calendar/2022/2/23/turing-fcai-meetup)Finnish Center for Artificial Intelligence.

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Dr. Bharti is an independent research fellow supported by the [\[url=https://research.fi/en/results/funding/81492\]](https://research.fi/en/results/funding/81492)Academy Research Fellowship of the Research Council of Finland. This funding is provided to support him in establishing his research group in the field of simulation-based inference. Prof. Kaski is Professor of Computer Science in Aalto University and Professor of AI in the University of Manchester. He is Director of Finnish Center for Artificial Intelligence and ELLIS Unit Helsinki, and Research Director of the Pankhurst Institute for Healthcare Technology.

Project description

Statistical inference of simulator-based models used in many domains of science and engineering is challenging due to the unavailability of the likelihood function, which is the probability density function of the data given the parameters. To solve this problem, the field of simulation-based inference (SBI) has emerged, wherein large numbers of simulations from the model are utilised for inference instead of the likelihood function. However, the performance of state-of-the-art SBI methods severely degrades when the model fails to capture the real-world phenomenon under study (i.e. under model misspecification), or when the model is computationally costly to run, thus limiting the number of available simulations. DREAM4SBI aims to tackle these bottleneck challenges by providing solutions that are compute-efficient and robust to model misspecification, thus making SBI methods more widely applicable.

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 12 000 students and a staff of more than 4000, of which 400 are professors. Our main campus is located in Espoo, 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 Department of Computer Science is an internationally-oriented community and home to world-class research in modern computer science, combining research on foundations and innovative applications. With over 40 professors and more than 450 employees from 50 countries, it is the largest department at Aalto University and the largest computer science unit in Finland. Computer science research at Aalto University ranks high in several prominent surveys (47th worldwide and 9th in Europe in Shanghai subject ranking 2019; and 56th worldwide in Times Higher Education subject ranking 2020).

Ready to apply?

Please submit your application through our recruitment system Workday. The deadline for applications is 15.08.2024. The position will be filled as soon as suitable candidate has been identified.

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To apply, please share the following application materials in one pdf file with us: * CV * Cover letter (highlighting your research interests and how they align with project; see Dr. Bharti's prior [publications](https://bharti-ayush.github.io/publications/) for reference) * Example of academic writing (B.Sc/M.Sc thesis, project report from a course, etc.) * Transcripts of MSc and BSc studies * The degree certificate of your latest degree

The candidates must have completed their Master's degree before the start of the contract period. Aalto University reserves the right for justified reasons to leave the position open, to extend the application period, reopen the application process, and to consider candidates who have not submitted applications during the application period.

For further information, please contact Dr. Ayush Bharti, e-mail ayush.bharti@aalto.fi.

Want to know more about us and your future colleagues? You can watch these videos: https://www.youtube.com/watch?v=5k_og_6zUJQAalto University - Towards a better world, <https://www.youtube.com/watch?v=dUfEGVM-ZP8&feature=youtu.be>Aalto People , and https://www.youtube.com/watch?v=ZK6pDWm1_CEShaping a Sustainable Future. And this webpage about Aalto and Finland. <https://www.aalto.fi/en/services/welcome-to-aalto-university-and-finland-info-package> Check out our new virtual campus experience: <https://virtualltour.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 just listed again as the happiest country in the world: <https://worldhappiness.report/news/its-a-three-peat-finland-keeps-top-spot-as-happiest-country-in-world/>. For more information about living in Finland: <https://www.aalto.fi/services/about-finland>

More about Aalto University:

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Contact Information

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

Contact

Finland