Doctoral Researcher in GeoAI & Large Language Models
Aalto University

Job Title	Doctoral Researcher in GeoAI & Large Language Models
Department	T213 Built Environment
Institution	Aalto University , , Finland
Date Posted	Feb. 5, 2025
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-GeoAI---Large-Language-Models_R42190

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 Engineering, Department of Built Environment invites applications for

Doctoral Researcher in GeoAI & Large Language Models

The GIScience for Sustainability Transitions (GIST) Lab ([url=https://gistlab.science]website) at the Department of Built Environment is seeking highly motivated and creative doctoral students who would

undertake research in the area of GeoAI / GenAI especially focusing on the use of Large Language Models (LLM) and Large Multimodal Models (LMM) to extract geographical information and navigation-related features from multimodal data (text, images, videos, geospatial data). The position is part of a research project that consists of partners from five European countries (Grant number 368679 funded by CHIST-ERA, 2025-2028). The candidate must be highly motivated to do research and enjoy working in an international and cross-disciplinary team.

The preferred start date for this position is 1 April 2025. The position is intended for full-time work, and we expect the candidate to work at the premises of Aalto University. The selected individual will work as part of a research team with approx. 12 members, and the work is supervised by Assistant Professor Henrikki Tenkanen and Professor Nico Van de Weghe ([url=https://geoaiugent.wordpress.com/]GeoAI Research Center, Ghent University). The position involves regular research visits and collaboration with top European universities, such as Ghent University (Belgium), University of Leeds (UK), University of Toulouse 3 (France) and University of the Basque Country (Spain). The successful applicant will have the possibility to cooperate with world-class researchers, participate in open-source GIS tool development targeted for context-aware navigation applications, and attend scientific conferences and meetings. Moreover, the research group provides strong support and academic freedom, with possibilities for transdisciplinary collaboration with national and international partners from academia and industry.

Research area, Requirements, and expectations
The work will be conducted as part of the "Geo-R2LLM" project, which aims to develop novel, knowledgeable and multimodal geographic Large Language Models (LLMs) for context-aware navigation. The PhD student will work within a work package focusing on integrating the project's Geo-LLM models into a context-aware navigation service, emphasizing research in spatio-temporal reasoning, multimodal data integration, and the generation of contextually relevant navigation instructions. Specifically, the PhD student will contribute to research on data preparation, evaluation of LLMs for navigation instruction generation, and the design and testing of a visual and language navigation system. The research will contribute to key research questions related to building geographic LLMs with spatial reasoning capabilities and designing multimodal LLMs for grounded predictions, related to fundamental research in GeoAI.

The research plan for the PhD dissertation will be formulated together with the candidate. The plan is expected to be in line with the project goals, but we will also consider the applicant's interests and expertise. A prospective student is expected to fulfill (many of) the following requirements:
*
Timely completion of a Master's degree in one of the following (or related) fields: GIScience, GeoAI, Computer Science, Language Technologies, Data Science. *

Experience with Large Language Models or other machine learning techniques *
Experience in knowledge-driven and data-driven AI *
Knowledge of GIScience, geospatial data formats, GIS tools and analysis methods *
Skills in data processing and data quality assurance *
Experience and/or interest in mobility research is considered a potential "added value." *
Ability to work in a team *
Willingness to learn *
Very good English proficiency

The applicant is expected to: *
Have a good and friendly attitude and work in a team towards common goals *
Publish research findings in peer-reviewed journals and present them at international conferences *
Contribute to open-source software development and share research data following FAIR principles *
If applicable, teach/assist in the master's program

Duration, financing, and salary
The doctoral studies at Aalto University take approximately 4 years. The doctoral degree is granted after completing selected PhD level courses (30 ECTS), writing a summary for the doctoral thesis (based on the student's publications) and public defense.

Currently, the starting gross salary for doctoral students is 2888 € per month, and it is increased as the work progresses to over 3500 € per month. The doctoral student will be granted a two-year contract first, followed by an evaluation and extension for the remaining years (in total 4 years) depending on the achievements during the contractual periods. The contract includes occupational health services, and Finland has a comprehensive social security system. Among European cities, Helsinki is special in being safe, clean, and close to nature, with a high quality of life. English is spoken everywhere. 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.

How to apply
Applicants must have completed a Master's degree in a related field (applicants completing their studies before April 2025 will also be considered). Proficiency in English is mandatory.
To apply, an application must include: *
Motivation letter with contact information and preferred starting date (max one A4 page) *
CV and contact information for 2 reference persons (max two A4 pages) *
Text example from the candidate: e.g. Master's Thesis, a scientific publication, or other relevant research work done by the applicant *
Highest degree certificate and transcripts of studies (with clear explanation on the grading scale) *

Link to a Github/Gitlab etc. repository demonstrating applicants analytical/programming skills

The candidates are evaluated based on their performance in Master's degree, their research potential for supporting the given research project and finishing a PhD dissertation, as well as motivation to work at Aalto University.

All material should be submitted in English in a single pdf-file (compiled with the order specified above). The application should be sent through the eRecruitment system (link 'Apply for this job' below) by 2nd March 2025. Email applications will not be taken into account. Aalto University reserves the right to leave the position open, to extend the application period and to consider candidates who have not applied during the application period.

For more information
General information about doctoral studies at Aalto University can be found at Aalto web page ([url=https://www.aalto.fi/en/programmes/aalto-doctoral-programme-in-engineering]https://www.aalto.fi/en/programmes/aalto-doctoral-programme-in-engineering). For additional information, please contact Assistant Professor Henrikki Tenkanen. In recruitment process related questions please contact HR Advisor Heidi Lehtinen tel. +358 50 340 9683. E-mails: firstname.lastname@aalto.fi.

Contact Information

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

Contact

Finland