

Postdoctoral researcher, ERC GEOCLOUD project (3+1
years)
Aalto University

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Posted Dec. 10, 2024, set to expire Apr. 11, 2025

Job Title	Postdoctoral researcher, ERC GEOCLOUD project (3+1 years)
Department	T313 Dept. Computer Science
Institution	Aalto University , , Finland
Date Posted	Dec. 10, 2024
Application Deadline	Open until filled
Position Start Date	Available immediately
Job Categories	Post-Doc
Academic Field(s)	Computer Science
Job Website	https://aalto.wd3.myworkdayjobs.com/aalto/job/Otaniemi-Espoo-Finland/Postdoctoral-researcher--ERC-GEOCLOUD-project--3-1-years-_R41656-4

Apply By Email

Job Description

Start date: March 2025

Post duration: 3 years in the first instance, with a 1-year extension negotiable

Location: Aalto University, Helsinki area, Finland

Professor Vili Lehdonvirta is hiring a postdoctoral researcher with quantitative analysis skills to work on GEOCLOUD: The Geopolitics of Cloud Computing, a new European Research Council Advanced Grant project. Outsourcing computation to cloud providers can be economically efficient while at the same time generating new systemic risks and dependencies that governments try to manage. GEOCLOUD is concerned with mapping the changing geography of computational infrastructures and understanding how it is shaped by the interaction of technology companies' business interests and states' economic and security interests. The project's regional foci are Europe and East/Southeast

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Asia, and the broader context of U.S.-China technological rivalry. The project aims to make important contributions to international political economy, security studies, economic geography, and/or Internet studies.

Responsibilities

The postdoctoral researcher will head a central work package focused on mapping and modeling the geography of cloud computing. This includes mapping where cloud data centres are located, who owns them, and which countries and sectors are relying on them. It moreover includes modeling how this geography is evolving over time in response to economic, environmental, and political factors, such as new regulations.

Data collection leadership: The postdoctoral researcher together with the PI will guide graduate students and research assistants who are collecting novel and innovative data on the geography of cloud computing. Data collection approaches developed and piloted in the lab include mapping data centre locations from public sources and using computational approaches (eg. DNS queries) and job advertisement data to assess cloud providers' country-level and sectoral market shares. The sectoral focus is on public and financial sector organizations, two sectors that provide critical services to societies. For instance, pilot research suggests that many UK public services use AWS, whereas Finnish public services use Azure; are some country's public services based on China's Alibaba Cloud? The postdoctoral researcher will lead the integration of the most successful data collection experiments into ongoing data collection efforts that produce valuable data for further analysis.

Modeling, analysis, and publication: The postdoctoral researcher will work with the PI to combine the novel cloud data with existing economic and political variables to develop models and analyses capable of elucidating the factors and processes that shape the locations, ownership, and usage of cloud computing infrastructures across geography and time. Modeling approaches could range from simple multi-level regression to least-cost modeling and other approaches depending on the successful candidate's skills and interests. The postdoctoral researcher will also lead on writing up key results into journal articles, with support from the PI and other lab members as appropriate. This is expected to form the largest part of the postdoctoral researcher's work over the contract's duration.

Visualization and public outreach: Later in the project the intention is to publish the most interesting data as an interactive online visualization that will serve as a public online resource for researchers, policy makers, and journalists seeking to understand whose computational infrastructures societies depend upon. This "Cloud Observatory" idea is inspired by the success of the Online Labour Index developed in the PI's previous ERC project, whose data was cited widely in media and by international organizations from the World Bank to the OECD. The postdoctoral researcher is expected to take an

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active role in the development of the observatory, with support from research assistants and contractors as needed, on eg. visual design and systems engineering. The postdoctoral researcher will have opportunities to engage about the research with journalists if they wish.

Overall, this is a demanding postdoctoral position that requires strong research and teamwork skills, and in return offers excellent career development opportunities, including travel funding, open access publication funding, co-authoring opportunities, graduate supervision opportunities, training courses, access to academic networks in Helsinki, Oxford, and beyond, and support in grant writing. In particular, Professor Lehdonvirta is keen to support senior team members in ultimately developing their own ERC Starting Grant applications.

Selection criteria

Essential selection criteria (you should have all of these)

Doctoral degree (or confirmed doctoral defence date) in a relevant discipline, such as economics, political science, geography, economic sociology, or social data science
Quantitative analysis and modeling skills relevant to developing explanations for the geographic distribution of economic activity
Academic writing skills relevant to publishing in leading journals in international political economy, security studies, economic geography, Internet studies, and/or related fields
Strong interest in global technology politics
Strong teamwork and communication skills in English

Additional selection criteria (you should have some of these)

Computational data collection and processing skills, eg. scraping and cleaning data, running automated scripts, esp. in Python
Data visualization skills
Familiarity with Internet architecture, eg. OSI layer model, IP routing, DNS system
Familiarity with major cloud computing platforms, eg. AWS, Azure, Alibaba
Familiarity with literature on geoeconomics and weaponized interdependence
Previous publishing record in a relevant field

Principal investigator and community

The project's principal investigator, professor Vili Lehdonvirta, is a Finnish-British sociologist and political economist with a background in computer science. He is the recipient of three European Research Council grants, has served on high-level expert groups at the European Commission, and has published two books on digital economies translated to Japanese, Chinese, and Italian. He holds a dual appointment as Professor of Technology Policy, Department of Computer Science, Aalto University, and Professor of Economic Sociology and Digital Social Research, Oxford Internet Institute,

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University of Oxford.

The postdoctoral researcher position is part of Professor Lehdonvirta's new Aalto-Oxford joint research group, titled the [\[url=https://diesl.eu/\]](https://diesl.eu/)Digital Economic Security Lab (DIESL). The multidisciplinary lab comprises both social and computer scientists. The lab's joint activities include weekly cross-site virtual seminars, annual in-person workshops in Oxford and Helsinki, and conference visits.

This position is physically based at Aalto's Department of Computer Science, one of the leading computer science research units in northern Europe. The department boasts a history of pioneering contributions to areas such as artificial intelligence and today hosts a growing community of social scientists studying digital technologies. It is situated in the Helsinki area, also home to Nokia, the European Center of Excellence on Countering Hybrid Threats, and a thriving cybersecurity and startup scene. Also located in the area is the Finnish Institute of International Affairs, known among other things for helping to modernize the academic study of geoeconomics.

Helsinki is the capital of Finland, ranked as one of the most innovative countries in the world. Finland is home to Google's and Microsoft's cloud regions as well as Europe's fastest publicly funded supercomputer LUMI. Finland's new European Commission Vice-President Henna Virkkunen is responsible for technological sovereignty, security, and democracy in the European Union. The World Happiness Report 2024 ranked Finland as the world's happiest country for the seventh year running.

Pay and benefits

The salary is approximately €4,000-€4,200 per month, depending on the successful candidate's skills and experience. Benefits include high-quality occupational healthcare, sports facilities, and training courses for supporting professional development. The annual working time is 1612 hours, which enables generous holidays. Support for relocation is available.

How to apply

Submit your application by Thursday, 9 January 2025 via Aalto's online application system. Please include the following attachments:

CV A cover letter that includes a point-by-point response to how your profile matches the selection criteria listed above (max. 1,500 words) One writing sample, preferably single-authored, demonstrating your academic writing skills, not necessarily on a related topic (ideally around 8,000 words)

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If your application is shortlisted, you will be contacted to arrange an interview. At that point you will also be asked to provide the contact details of two referees.

Please send any informal queries via email to [\[url=mailto:vili.lehdonvirta@aalto.fi\]](mailto:vili.lehdonvirta@aalto.fi) with the word GEOCLOUD in the subject line.

Related publications

Lehdonvirta, V. Wu, B., and Hawkins, Z. (2024). Weaponized interdependence in a bipolar world: How economic forces and security interests shape the global reach of U.S. and Chinese cloud data centres. Working paper. [\[url=https://dx.doi.org/10.2139/ssrn.4670764\]](https://dx.doi.org/10.2139/ssrn.4670764)

Lehdonvirta, V. Wu, B., and Hawkins, Z. (2024). Compute North vs. Compute South: The Uneven Possibilities of Compute-based AI Governance Around the Globe. 7th AAI/ACM Conference on AI, Ethics, and Society. San Jose, CA, October 21-23, 2024. [\[url=https://doi.org/10.31235/osf.io/8yp7z\]](https://doi.org/10.31235/osf.io/8yp7z)

Contact Information

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

Contact

Finland