PhD position on measuring the long-term acceleration and crisis of industrial societies (ERC Consolidator Project RiDe)

The European Research Council Consolidator project "Rise and Demise of Industrial Modernity" (RiDe) at the University of Tartu (Estonia) is looking to fill a fully funded 4-year PhD position, broadly in the field of computational social science. The project is led by Laur Kanger, Professor of Sustainability Transitions and co-author of the Deep Transitions framework (see here, here and here) underpinning the project.

About the project

Contemporary societies are underpinned by industrial modernity: a set of commonly shared ideas, institutions and practices related to the natural environment and technoscience. Having historically unleashed massive leaps in productivity, economic growth and societal welfare, many traits of industrial modernity have now become maladapted to the current socio-ecological polycrisis. As a result, science and technology promise to solve the grand challenges of climate change, resource depletion and loss of biodiversity with one hand, only to keep intensifying them with another.

RiDe will use a new Deep Transitions framework from the sustainability transitions field to provide an overarching synthesis on the acceleration, crisis and transformative prospects of industrial societies from 1900 to the present. It focuses on 3 questions: 1) what are the major historical continuities and emerging ruptures in industrial modernity? 2) what are the mechanisms through which technoscience keeps blocking transformative environmental practices? 3) in which countries is major transformative change most likely to occur? The results will be synthesized into the first macro-level middle-range process theory in transitions studies, offering a new comprehensive, historically informed and empirically backed interpretation of industrial modernization for sustainability science.

Topic description: "Ideational continuities and ruptures of industrial modernity in G20 countries"

The purpose of the PhD project is to map the long-term evolution of different ideas about environment and technoscience (e.g. belief in societal progress through science and technology, rising environmental awareness) in G20 countries from 1900 to 2025 based on digitized newspaper corpora and using state of the art machine learning methods, including large language models (see here and here). The results are expected to contribute to 1) a typology of industrialization pathways developed by the research team; 2) an index comparing the historical legacy of industrial modernity in different countries. The research builds on the team's prior work on quantifying long-term continuities and ruptures in the foundational ideas, institutions and practices of industrial societies (see here and here).

What we expect

The applicant must have a Master's degree or equivalent qualification. Preference is given to candidates with a background and prerequisite skills in one of the following fields: digital humanities, computational social science, data science, sustainability transitions studies, science and technology studies, innovation studies, sociology (e.g. economic, political, environmental, historical), political science, economics (e.g. economics of innovation, ecological economics), political science, history (e.g. economic, environmental, intellectual, science and technology), sustainability science (or a related field). Alternatively, a Master's degree in another field combined with a strong and proven interest in sustainability issues also constitutes a good fit.

The ideal candidate will also have:

- At least a basic familiarity with writing code and working with textual data;
- Willingness to expand the skill set as required during the first year of their studies (the Estonian PhD system has space for completing about one year's worth of coursework during the four-year programme);
- Excellent written and spoken English proficiency;
- A solid background in **any two** of the following:
  - Working with, handling and wrangling large digital corpora, especially complex historical data;
  - Natural language processing (e.g., topic models, sentiment analysis, OCR, taggers);
  - Working with generative Large Language Models (e.g. GPT, Gemini, Llama, Deepseek), especially for zero-shot text annotation and analysis;
  - Experience with cloud computing, HPC clusters, and APIs;
  - Advanced programming experience (e.g. scientific computing, research software development, or applied work in industry).

Supervisors: Laur Kanger, Andres Karjus

What we offer

- Full-time employment (100% research, up to 48 months) at the Institute of Social Studies, Faculty of Social Sciences, University of Tartu with a competitive salary of EUR 1,950 gross/month (PhD);
- 42 paid vacation days per year and generous annual travel support for conferences;
- A supportive and international research environment within a diverse interdisciplinary team working at the frontier of sustainability transitions studies;
- Located in Tartu (Estonia), a university town with excellent quality of life (see below).

Team and the PI

The project will consolidate interdisciplinary and multi-method expertise in Deep Transitions research, initially developed during a five-year research project that ended in 2023. The core team members have a highly diverse disciplinary background, combining deep domain expertise in sustainability transitions studies, computational social science, machine learning, digital humanities, history of science and technology, political economy, and innovation management.

Laur Kanger is a Professor of Sustainability Transitions in the Institute of Social Studies, University of Tartu, with research interests in transitions studies, history and theory of technology, and macro-historical sociology. He has contributed to the conceptualization of Deep Transitions, the Multi-level Perspective on socio-technical transitions, policy intervention points for facilitating transitions, societal embedding of radical innovations, the role of users in transitions, and energy justice. Thematically, Laur's research has covered energy and mobility transitions, mass production, digitalization, and industrial modernity.

Why do a PhD in Estonia?

Estonia offers Nordic quality of life, a strong academic environment and convenient digitized services—all while maintaining a reasonable cost of living that supports comfortable student life. The University of Tartu, founded in 1632, ranks among the top 1% of the world's most cited universities and actively fosters sustainability and intersectoral collaboration, having produced numerous successful startups. Estonia itself ranks #1 in startups per capita in Europe.

As a member of the EU and NATO, Estonia is internationally minded, and English is widely spoken. Estonia's digital infrastructure streamlines official procedures, as everything from contracts to taxes can all be handled online in minutes by citizens and residents alike. Tartu is a lively university town known for its cozy atmosphere, vibrant student life, bike and walking friendly spaces, and scenic riverside. It has been named the UNESCO City of Literature, and the European Capital of Culture in 2024. The city is well connected to Europe and the world, but also offers easy access to nature, with nearby vast networks of forest hiking trails, excellent winter sports opportunities, and the charm of four distinct seasons.

How to apply

This is a PhD position situated within an already funded research project, and therefore the prospective student is expected to work on topics closely aligned to the project and its work packages. However, a formal proposal is still required as per university regulations, and will be useful in assessing candidates' motivation, suitability and match with the project goals.

International applicants should complete the application form in **DreamApply between 1 and 15 May**, including all requested documents. Read more about requested documents in DreamApply here.

Estonian citizens and international applicants with a master's degree from Estonia can apply **on 1-15 June in SAIS**.

Requested documents in SAIS:

1. **PhD project proposal** with the recommended length of **2000-3000 words** (excluding the reference list), including the following information:
   1.1. Topic of the thesis, incl. a short summary of the research problem and the most important related research;
   1.2. Purpose and problems of the work;
   1.3. Description of the methodology to be used;
   1.4. Expectations for the results, incl. their novelty and importance;
   1.5. Self-assessment of the applicant regarding their readiness to research this topic: knowledge of the relevant materials and relatedness with earlier research or work in the field.
2. Proof of English language proficiency (applies to international applicants if they have not graduated from an English-taught bachelor´s or master´s programme in Estonia (https://ut.ee/en/sisu/phd-language-requirements);
3. Academic CV (see example form for more details)
   3.1. Although not mandatory, the applicant is strongly encouraged to add any published research publications or preprints to the application (if applicable).

Applicants passing the first stage of evaluation based on written materials will be invited to an interview (either in person or virtual).

Please contact **Maiu Reinhold** (Specialist for International Relations, Institute of Social Studies, maiu.reinhold@ut.ee) for any practical matters regarding the application process. Since this is a project-funded PhD position, the prospective candidates are strongly encouraged to get in touch with **Laur Kanger** (laur.kanger@ut.ee) with any substantive questions about the PhD topic and project proposal.

About the Institute of Social Studies

The Institute of Social Studies is one of the largest social science institutes in Estonia. Its research focuses on three main subject clusters: Journalism and Communication; Sociology, Social Work and Social Policy; and Information Sciences. The institute has a total of ten curricula at all three levels of higher education. Its journalism and communication curriculum has been ranked among the best in the world in the prestigious QS World University Rankings by Subject.