Open position for PhD researcher:

Techno-economic analysis of data-enabled ecosystems based on Solid technology

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Context

imec

imec is a world-leading research and innovation hub in nanoelectronics and digital technologies. The combination of our widely acclaimed leadership in microchip technology and profound software and ICT expertise is what makes us unique. By leveraging our world-class infrastructure and local and global ecosystem of partners across a multitude of industries, we create groundbreaking innovation in application domains such as healthcare, smart cities and mobility, logistics and manufacturing, and energy.

As a trusted partner for companies, start-ups and universities we bring together close to 4000 brilliant minds from over 97 nationalities. Imec is headquartered in Leuven, Belgium and also has distributed R&D groups at a number of Flemish universities, in the Netherlands, Taiwan, USA, China, and offices in India and Japan. All of these particular traits make imec to be a top-class employer.

IDLab research group @ Ghent University/ imec

The Internet Technology & Data Science Lab (IDLab) is an imec research group at Ghent University and the University of Antwerp. IDLab focuses its research on internet technologies and data science. Bringing together more than 300 internet experts, we develop technologies outperforming current solutions for communication subsystems, high speed and low power networking, distributed computing and multimedia processing, machine learning, artificial intelligence and web semantics. IDLab has a unique research infrastructure used in numerous national and international collaborations.

IDLab collaborates with many universities and research centers worldwide and jointly develops advanced technologies with industry (R&D centers from international companies, Flanders' top innovating large companies and SMEs, as well as numerous ambitious start-ups).

The IDLab techno-economics team where this vacancy is offered http://technoeconomics.idlab.ugent.be/ consists of engineers and economists who are supporting decision makers by translating technological innovation into business opportunities and challenges in different application domains like smart cities, smart mobility and smart energy. The group aims at providing research insights that help companies and policy makers in their decision making. Our research aims to put forward methodology-backed insights that combine technical solutions with expected economic impact like costs, benefits and related business models.

Techno-economic analysis of data-enabled ecosystems based on Solid technology

Digital platforms are constantly gaining importance. Data is a valuable resource allowing to build applications in different domains. Based on personal data even more added value can be created for end users. Collecting multi-modal mobility data on a cloud-based platform, for example, can enable a multitude of traffic management solutions. Public as well as private actors can offer solutions that improve the city mobility, create an added value for the citizens and stimulate the local economy. In the media domain, personal recommendations can be improved when combining data from different media channels (tv, content providers, music, etc.).

Modern-day companies built their own way of storing and collecting their users' data. World Wide Web inventor Tim Berners-Lee calls this 'data silos' where each company protects its data from others, giving them a competitive advantage. The alternative proposed in the Solid project https://solidproject.org/ by MIT prof. Tim Berners-Lee and IDLab prof. Ruben Verborgh is a decentralized way of storing data, a personal data pod. If, for example, you migrate to another service, your data is still in your personal pod. This allows you to keep control over your own data and decide what you share, and with whom.

In order to evaluate the feasibility of digital platform ecosystems in general and the market potential of personal data pod based ecosystems in particular, some interdisciplinary research questions remain to be answered. A major overarching research objective is to understand the relationship between technical requirements and the value creating potential in a digital ecosystem based on linked open data or personal data vaults, in order to ensure that further technical developments go in the direction that indeed leads to market potential for this technology. As the technology has application potential in a broad range of domains like media, home, care, mobility and others, there are many more detailed research challenges ahead.

In order to face the different research challenges in this interdisciplinary domain, we are looking for a researcher who is able to combine technical and economic insights and has a strong interest in data technology and the business potential it enables. The researcher will work within the interdisciplinary research project SolidLab https://solidlab.be/ as well as other related national as well as international cooperations.

Job description

The job

- Under the supervision of a professor and a postdoc researcher in the team, you will prepare a PhD dissertation over a duration of about 4 years.
- You perform cutting-edge research in the domain of techno-economic evaluation of digital platform ecosystems enabled by Solid technology
- You publish and present results both at international conferences and in scientific journals.
- You validate your research by considering concrete use cases and discussing with public and private actors in the field.

- You tightly collaborate with IDLab colleagues within the techno-economic teams, as well as in other teams where appropriate.
- You will be involved in different research projects related to your PhD topic, in the framework of national and European funded research cooperations, and collaborate with research partners from industry.
- You will assist the research group with limited educational tasks.

Job requirements

- Holder of a Master degree in Computer Science, Computer Science Engineering, Electrical Engineering, IEOR or Commercial Engineering.
- Strong interest in economic evaluation of technological projects.
- Strong analytical skills for designing and implementing abstract models.
- Experience with object-oriented programming and web-based development is a plus.
- You work independently, have a strong feeling of responsibility and are able to commit to timing and milestones set forward by different research projects.
- You are a team player and have strong communication skills.
- A good knowledge of English and Dutch (oral and written) is a must.

Our offer

We offer a challenging, stimulating, young and pleasant research environment where you can contribute to solving real-life problems for technological innovations with a clear societal as well as economic value. The work is done in close collaboration with ICT and telecom industry players in Flanders and Europe. The UGent doctoral school program offers possibilities for following a range of courses or trainings of your interest. We foresee a competitive remuneration and the possibility to obtain a PhD degree in Engineering.

How to apply?

This PhD position is available immediately (starting date not later than Sept 1st 2023, but preferably earlier) and is open until the vacancy is filled. The position is not open for post-docs.

Apply asap by sending an email to prof. Sofie Verbrugge. Your application should include

- your resume (curriculum vitae)
- motivation letter (indicating both your technical and economic background/interest as well as any specific research skills)
- a copy of your diploma and diploma supplement (with overview of all courses followed)

More information

Sofie Verbrugge – sofie.verbrugge@ugent.be