

PRE-DOCTORAL POSITION ON CONTEXT-AWARE DATA ENGINEERING (M/F/X)

AREA: COMPUTER SCIENCE

START DATE: 2024-09-01 (NEGOTIABLE)

DEADLINE: 2024-05-17

Located in the French-speaking part of Belgium, the University of Liège welcomes nearly 27,000 students of 123 different nationalities in a dynamic, multicultural city less than an hour away from Brussels and Cologne, two hours from Paris and three hours from London and Amsterdam. ULiège is spread across 4 campuses and boasts over 5,700 staff members, including 3,600 teachers and researchers active in all areas of the humanities and social sciences, science and technology, and health sciences.

As a key player in social change and environmental awareness, ULiège promotes ethical, transdisciplinary and open science. It contributes to the socio-economic development of its region through numerous partnerships with several institutions, including the university hospital (CHU). Given its international orientation, the University participates [in the European University of Post-Industrial Cities \(UNIC\)](#) initiative and has one of the most extensive collaborative networks in the world.

ULiège offers attractive career prospects [in a high-quality working environment](#) where well-being, diversity and equality of opportunity are promoted. Since 2011, ULiège has been proud to display the European [Human resources strategy for researchers](#) (HRS4R) label, which reflects its commitment to open, transparent and merit-based procedures. In addition, it upholds quality and diversity in line with the recommendations of the [Coalition for Advancing Research Assessment \(CoARA\)](#). ULiège encourages its academic staff to travel internationally and welcomes international researchers through its EURAXESS center.

ABOUT THE PROJECT

The Data Representation and Engineering lab at the Montefiore Institute of the University of Liège, which is started up and led by Prof. Christophe Debruyne, has been awarded an FNRS MIS grant for the “Introducing Context-Awareness in Data Integration Processes for Data-driven Projects with Knowledge Graphs” (CADIKG) project. This project studies data integration from various angles: data engineering, data science, and data governance. This project aims to formalize the context surrounding these angles and build intelligent models or agents that use that context to drive data integration processes.

JOB DESCRIPTION

The Ph.D. candidate will conduct research on context-aware data engineering in CADIKG. The ideal candidate will have a strong background in computer science, with expertise in areas such as artificial intelligence, knowledge graphs, and data engineering. The candidate will design

and conduct experiments, analyse data, and develop novel algorithms and methodologies. Strong programming skills and a solid theoretical foundation are essential. The candidate will collaborate with the research team, attend conferences, and actively contribute to preparing research papers for publication.

SPECIFIC DUTIES & ACTIVITIES

- ▶ Conduct field and desk research.
- ▶ Complete the doctoral program.
- ▶ Formalize the context of data engineering in data integration.
- ▶ Propose methods and tools for using context models in data integration tasks.
- ▶ Attend meetings and collaborate with others in the CADIKG project.
- ▶ Design and conduct experiments.
- ▶ Disseminate research findings in conferences and journals.
- ▶ Write and defend a doctoral dissertation.

PROFILE

○ **REQUIRED SKILLS:**

- ▶ The Ph.D. candidate must hold an MSc or MEng in computer science or equivalent and meet all the requirements to enrol in the university's doctoral program.

Please note that your master's degree must be equivalent to a Belgian master's degree (180 ECTS/3 years BSc or BEng, followed by 120 ECTS/2 years MSc or MEng).

The candidate is required to have attained their degrees with a minimum of distinction or cum laude.

- ▶ Demonstratable knowledge of graphs OR data engineering. (*)
- ▶ Demonstratable ability to develop (prototypes).

○ **DESIRABLE SKILLS :**

- ▶ Knowledge of graphs OR data engineering. (*)

○ **SOFT SKILLS :**

- ▶ Collaborative and interactive spirit, but able to work independently.

○ **LANGUAGES :**

- ▶ Proficiency in the English language, both written and oral.

(*) The candidate has, ideally, demonstratable knowledge in either knowledge graphs or data science, which is (desirably) complemented with (demonstratable) knowledge in the other.

TERMS OF EMPLOYMENT

- ▶ **Type of contract:** full-time
- ▶ **Contract duration:** 4 years
- ▶ **Expected start date:** September 1, 2024 (at the latest)

Employment is conditional on the candidate's successful registration as a doctoral student at the Doctoral School of the School of Engineering of the University of Liège. Doctoral studies must be completed per the School's rules and requirements for obtaining the degree.

OUR OFFER

With your career path and personal details, the ULiège Human Resources Department can assess the gross monthly salary. Employment benefits such as reimbursement of public transportation fees, and access to a [variety of training](#) opportunities are also included.

▶ WORK ENVIRONMENT

The [Montefiore Institute](#) is both the Department of Electrical Engineering and Computer Science of the University of Liège, and the associated Research Unit. Its mission is to provide high-quality education at the Bachelor's, Master's, and Doctoral levels, to conduct leading international research in selected areas of electrical engineering and computer science, and to be a driving force in turning research results into an industrial activity.

HOW TO APPLY

Please send the following documents in PDF to c.debruyne@uliege.be by 2024-05-17.

- ▶ Cover letter
- ▶ CV
- ▶ MSc or MEng diploma and transcripts in the original language, including a certified English translation if they are not in French
- ▶ BSc or BEng diploma and transcripts in the original language, including a certified English translation if they are not in French
- ▶ List of publications (if any)
- ▶ Examples of academic writing (such as your master's thesis)
- ▶ References or letters of recommendation (optional)

SELECTION PROCEDURE

The application deadline is May 17, 2024, at 11:59 PM CET.

Applicants will only be considered if they meet the eligibility criteria described above.

Applicants will be assessed and shortlisted for interviews, expected to occur in May-June. All candidates will be informed of the outcome of their application.

Our corporate policy is based on diversity and equal opportunity. We select candidates on the basis of their skills and do not discriminate on grounds of age, sexual orientation, origin, beliefs, disability or nationality.

CONTACT DETAILS AND FURTHER INFORMATION

Informal inquiries about the project are welcome. Please feel free to contact Prof. Christophe Debruyne by email c.debruyne@uliege.be.

Release date: 04/23/2024

Privacy policy

Personal data collected following your application will be processed by Christophe Debruyne of the University of Liege for the sole purpose of recruitment.

The data will be processed within the framework of pre-contractual measures (art. 6-1, b. of the General Data Protection Regulation) and kept for up to 9 months after the publication of the vacancy. Your personal data will not be passed on to any third parties.

In accordance with the provisions of the GDPR (EU 2016/679), you may exercise your data protection rights (right of access, rectification, erasure, restriction, and portability) by contacting ULiège Data Protection Officer (dpo@uliege.be - Mr. Data Protection Officer, Bât. B9 Cellule "GDPR", Quartier Village 3, Boulevard de Colonster 2, 4000 Liège, Belgium). You may also lodge a complaint with the Data Protection Authority (<https://www.autoriteprotectiondonnees.be>, contact@apd-gba.be).