Postdoctoral

Ecole/Institution/Société:
KU Leuven, **Belgium / Leuven**

Discipline:
Artificial Intelligence

Type d'emploi::
Full-time

Date de publication:
2025-02-23

Personne à contacter:
If you wish to apply for this position, please specify that you saw it on AKATECH.tech

PhD Positions in Artificial Intelligence at Computer Science

All positions are in the Machine Learning subgroup of the Section for Declarative Languages and Artificial Intelligence (DTAI), which is part of the Department of Computer Science at KU Leuven. The DTAI lab is one of the leading research groups for machine learning, artificial intelligence and data mining. DTAI's machine learning group currently has six faculty members (Hendrik Blockeel, Jesse Davis, Luc De Raedt, Tias Guns, Giuseppe Marra, Siegfried Nijssen), two research managers (Wannes Meert and Jessa Bekker) and more than 10 post-docs and 35 doctoral students.

The Machine Learning group follows an artificial intelligence approach to data analysis and decision making. It investigates a wide variety of machine learning and data science problems. It mostly concentrates on problems that involve complex and structured data and background knowledge. It has expertise in areas such as Learning and Reasoning, Automated Data Science, Learning Constraints and Optimisation Criteria, Neurosymbolic AI, (Constrained) Clustering, Probabilistic Programming, Statistical Relational Artificial Intelligence, Predictive Learning, Verification and Machine Learning and it is applying its expertise in areas such as Anomaly Detection, Sports Analytics, Robotics, Sensor data, Action and Activity Learning and Operations Research (see https://dtai.cs.kuleuven.be/ for more information).

We are currently looking to hire:

1) 1 PhD student working with Prof. Tias Guns on human-centric explainable constraint solving: a combination of constraint solving (CP/SAT/MIP and interactive optimisation), explainable AI (conflict explanations, contrastive explanations) and in a project in collaboration with human-computer interaction researchers. (see https://research.kuleuven.be/portal/en/project/3E241263)

2) 1-2 PhD students working with Prof. Jesse Davis on the topics of verification and reasoning techniques for tree ensembles with applications to sports and anomaly detection in the context of Flanders AI Research Program (https://www.flandersairesearch.be/en)

3) 1-2 PhD students working with Prof. Giuseppe Marra on neurosymbolic (NeSy) AI topics, including relational concept based models, where we want to enhance deep learning models interpretability by making explicit their reasoning in terms of the involved entities and their relationships (see https://research.kuleuven.be/portal/en/project/3E241274), and scalable generative NeSy, where we want to scale generative NeSy models using techniques from lifted probabilistic inference (https://research.kuleuven.be/portal/en/project/3E240384).

4) 1-2 PhD students working with Profs Luc De Raedt and Giuseppe Marra on neurosymbolic (NeSy) AI applications and foundations in the context of the ERC project DeepLog - Deep Probabilistic Logic and the Flanders AI Research Program (see https://research.kuleuven.be/portal/en/project/3E240562 and https://www.flandersairesearch.be/en)

5) 1-2 PhD students working with Prof. Hendrik Blockeel on analysis of time series and hyperspectral data. This includes studying methods for anomaly detection (locating areas in a time series, image, etc. where the data deviate from normal behavior); detection of “motifs” (repeating patterns); improving the efficiency of such methods via tensor decompositions; and more. A strong background in both algorithms and math is expected of candidates. For some examples of our research in these areas, see https://link.springer.com/article/10.1007/s10618-024-01032-z , https://research.kuleuven.be/portal/en/project/3E230536)

Website unit

Project

You will work under the supervision of and be mentored by one of the professors of the Machine Learning group mentioned above, that is, Prof. Jesse Davis, Prof. Luc De Raedt, Prof. Tias Guns, Prof. Giuseppe Marra or Prof. Hendrik Blockeel. You will be part of a dynamic team that performs cutting-edge research in artificial intelligence, machine learning and data science. You will play an active role in the research team, publish papers, take part in workshops, public events and other activities.

Profile

The candidates should have a Master's degree in Computer Science or Artificial Intelligence. Candidates must have advanced theoretical and programming skills, be proficient in oral and written English, possess great communication and multi-tasking skills, and be team-oriented, proactive and result driven. The positions can start immediately, and positions will be filled as soon as suitable candidates are found.

Interested candidates should send their résumé, contact information of 2 or 3 referees, your latest BSc and MSc transcripts (or documentation of achievements in current program) and a motivation letter using the KU Leuven system. The motivation letter should clearly identify the topic(s) the candidate wants to work on, your motivation for those topics and why you are a good fit for them.

Offer

A PhD position, initially for one year, but extendible until max. 4 years. A stimulating environment at a European top university in a well-equipped, experienced and internationally oriented research unit.

The research will be based at the Department of Computer Science at the Arenberg Campus in Heverlee (close to the center of Leuven).

Interested?

For more information, please check the websites listed above, or contact one of the professors. In all cases you have to formally apply to this job listing to be considered.

KU Leuven strives for an inclusive, respectful and socially safe environment. We embrace diversity among individuals and groups as an asset. Open dialogue and differences in perspective are essential for an ambitious research and educational environment. In our commitment to equal opportunity, we recognize the consequences of historical inequalities. We do not accept any form of discrimination based on, but not limited to, gender identity and expression, sexual orientation, age, ethnic or national background, skin colour, religious and philosophical diversity, neurodivergence, employment disability, health, or socioeconomic status. For questions about accessibility or support offered, we are happy to assist you at this email address.

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