JOB OFFER
Researcher in Robotics Engineering for demining (M/F/X)
MECA > Robotics and Autonomous Systems
Project AIDEDeX
Publication: 09 DEC 2024

CONTEXT

The Royal Military Academy is a military institution and is fully recognized as a university, fulfilling the same criteria as civilian universities. The RMA is also conducting scientific research at university level for projects funded by the Belgian Defence department or external sources.

In the framework of the study **AIDEDex** on the development of unmanned ground vehicles for hidden threat detection, we are looking for a full-time researcher in Robotics Engineering with a Master's degree in Computer Engineering, Computer Sciences, Electrical Engineering or related disciplines.

We value diversity and equal opportunities. Whether you are a man, a woman or X, or come from any background, we firmly believe that diversity enriches our community, and we encourage all qualified candidates to apply.

PROJECT:

You work within the department of Mechanics in the **Robotics and Autonomous Systems Lab**, of the Faculty of Applied Sciences of the RMA and in close collaboration with your colleagues of the RMA and the partners of the project. You conduct scientific research at university level on a project entitled **"Artificial Intelligence for Detection of Explosive Devices - Extended (AIDEDeX)"**.

The main focus of **AIDEDeX** (https://aidedex.eu/) is on the **automated detection of Improvised Explosive Devices (IEDs)** using Artificial Intelligence techniques on data collected from a large suite of sensors for using AI across the whole chain of command, **control, planning, IED and landmines detection and classification, Navigation and multi-robot decisional autonomy**, AIDEDex will address to create a step change in maturity of the technologies from the high risk, high reward, and disruptive approach from AIDED.

MAIN TASKS:

- **Integration and testing of robotic systems (UGV platforms)** for the detection of most common types of hidden threats, leveraging advanced sensor technologies.
- **Develop and enhance** the perception capabilities of the robotic platforms (machine vision, machine learning based vison, lidar based methods).
- **Develop a fleet / multi-agent robots coordination system** in accordance with partners for optimal area threat clearance.
- **Assist with the field trials of the robotic systems** conducted yearly in September in a foreign country of Europe.
- **Learn about hidden threat detection** and ensure co-creation and co-development with end users (the deminers of Belgium).
- **Participate and contribute to research studies** and scientific conferences for the dissemination of results.
- **Follow-up** of master thesis students on subjects related to your study.

SKILLS AND EXPERIENCE:

Degree(s) required / ideal degree(s): Master's Degree in Engineering Sciences, Computer Science, or a related field
This position is open for **junior profiles** (0-3 years of experience, thus young graduates are also encouraged to apply) or **experienced profiles** (3+ years of experience).

"MUST HAVE" skills:
Experience in:

- programming languages C/C++ and Python;
- hardware and software integration of sensor suites in robotic systems;
- Robot Operating System (ROS2).

"NICE TO HAVE" skills:
Training / experience:

- in machine vision
- in SLAM techniques
- in multi-robot or swarm systems
- with complex software architectures assemblies, deployment and testing (e.g. Docker).

Personal skills:

- You conduct independent and ethical scientific research in a multidisciplinary environment.
- You think creatively and innovatively.
- You communicate your results clearly, concisely, and precisely.
- You commit fully to your work, striving for the highest quality standards, and persevering when necessary.
- You will work closely with both industrial and academic partners, gaining insight into proprietary intellectual property, so maintaining confidentiality is essential.

Other skills:

- The applicant shall have good knowledge of English (oral / written).
- Minimum knowledge of French or Dutch is an added value for collaboration with peers.

SPECIFIC REQUIREMENTS

- The researcher may be exposed to classified information and will therefore have to obtain the required security clearance. The candidate must consent with the background check required to obtain this clearance, which will be executed by Belgian Defence.
- **Only applicants with a nationality of a country that is both part of NATO and the EU will be eligible.**
- Working for the Patrimony requires living in Belgium for the duration of the study.

APPLICATION

Please send by email:

- a CV and motivation letter
- a scan of your ID card (both sides)

to Mr Geert De Cubber (geert.de.cubber@mil.be), to Mr Ken Hasselmann (ken.hasselmann@mil.be) and to erm-deao-rswo@mil.be

Please mention clearly the reference of the project: "**AIDEDeX**".

Application deadline: **02/01/2025.**

The interviews will take place on-line. The date and time of the interview will be communicated to the preselected candidates.

CONTRACT

- Probable date of recruitment: From March 2025, in consultation with the applicant.
- Status: Full-time employment based on an open-ended contract with the Patrimony of the Royal Military Academy (you will not be a civil servant).
  - Please note that your contract will be open-ended, but the financing of the contract will be tied to the funding project, which is guaranteed until the end of 2027. The financing of your contract beyond that period is therefore not 100% guaranteed. However, the Patrimony has a policy to keep the good elements on board and the research focus of this job offer fits within our core research activities, so there is a high chance that we will be able to offer you follow-up projects beyond that date if you decide to stay.
- Wage scale: class A1 (holder of a Master's degree in Science or equivalent), class A2 (holder of an Ir degree or equivalent Master's in Engineering Sciences, doctor's degree in the same area of expertise). RMA-Patrimony applies a merit-based research career track, allowing researchers to advance in wage scale based upon annual evaluations.
- Holiday pay.

EXTRA LEGAL BENEFITS

- Possibility to benefit from a bilingualism allowance (Dutch/French) following a SELOR test;
- End-of-year bonus;
- Free DKV hospitalization insurance. Possibility of additional affiliation for one or more persons living under the same roof: spouse, child(ren) (50% of the price per additional member);
- Bike allowance / Free public transport (home-work commute);
- Meal vouchers (6€ / day);
- Free access to campus sports facilities outside working hours;
- On-campus restaurant and cafeteria with democratic prices (discount on the daily menu);
- Flexible working hours within the 38-hour week;
- Teleworking possible with allowance (2 days / week max);
- Holidays:
  - 29 days holiday / year from the 1st year of contract (then from 45 years: +1 day holiday every 5 years)
  - 1 week OFF every year between Christmas and New year's Eve (independent of the annual balance of holidays).
- Advantages and interesting offers thanks to the Benefits@work card (discounts, vouchers...);

- Entitlement to services offered by the 'Office Central d'Action Sociale et Culturelle de la Défense' (OCASC): among others holiday centres, discount on travel organised by the tour operator...;
- Possibility to benefit from the nursery funded by Belgian Defence (subject to availability).

WORKPLACE

Royal Military Academy, Avenue de la Renaissance 30, 1000 Brussels.

Occasional travels abroad for scientific conferences, etc.