



Job offer
Royal Military Academy - Patrimony



Researcher in **Cyberdefense** (M/F/X)
Departement CISS
project “**Automated red teaming-DAP/22-13**”
Publication: January 2024

Job description and associated tasks

In the framework of the study DAP22-13 “Automated red teaming”, we are looking for a **full-time researcher in cyberdefense with a Master of Science in Cybersecurity, in Computer Science, or equivalent**.

Context:

The Royal Military Academy of Belgium (RMA) is a military institution responsible for the basic academic, military and physical training of future officers, and for the continuing advanced training of officers during their active career in the Belgian Defense department (www.rma.ac.be). It is fully recognized as a university, fulfilling the same criteria as civilian universities. The Royal Military Academy is also conducting scientific research at university level for projects funded by the Belgian Defense department or external sources.

The CISS department develops a high expertise in C4I Command, Control, Communication, Computers & information systems. The expertise that was build-up is applied in both security and Defense related problems.

You will work within the cyberdefense laboratory (CyLab) of the CISS department of the Royal Military Academy. The laboratory staff teaches academic courses at the Royal Military Academy and in the inter-university Master in Cybersecurity. The lab also organizes short workshops. The courses and workshops cover the following subjects:

- Networks and network security;
- Distributed information systems;
- Information security;
- Forensics and malware reverse engineering;
- Management of cybersecurity.

The research interests of the cybersecurity laboratory currently focus on:

- Detection of Advanced Persistent Threats (APT's);
- Detection of cyber-attacks using machine learning and AI;
- Cyber training systems and cyber ranges;
- Prevention of phishing.

What we offer:

- Working in a young and dynamic team, where autonomy and taking initiatives is encouraged.
- The possibility to work on exciting projects related to cybersecurity, with concrete applications.
- Working with high-end equipment (laptop, screens, servers...).
- The possibility of obtaining a Master in Cybersecurity.

Study:

For this project, we plan to study and implement an automated red teaming capacity for cyber range based trainings. To that aim, the project will address the following requirements:

- a language for describing attack scenarios,
- a planner to generate attack scenarios,
- an orchestrator to carry out the planned attack.

Main Tasks

- Study and analyse existing languages for defining topologies, configurations, and attacks in order to propose and implement a scenario description language suitable for cyber range based trainings;
- Analyse the state of the art on AI-based planning, compare available algorithms and implementations, in order to design and implement an appropriate planner for attacks in the context of cyber range based trainings;
- Identify and compare orchestration approaches, select and implement an appropriate one for the specific requirements proper to the context of cyber range based trainings;
- Disseminate the work and findings through reports, publications and conferences.

Required skills

Technical skills

The applicant shall have a **Master of Science in Cybersecurity, in Computer Science, or equivalent**.

- Training or experience in Linux and classical development environments (command line, git, ssh etc.) is required;
- Training or experience in Java or Python programming language is highly recommended;
- Training or experience in cyber security is an added value.

Personal skills

- You can develop software autonomously.
- You don't settle for sub-standard solutions and always try to achieve a high level of quality.
- You can conduct scientific research at a university level by searching existing literature, analyzing existing solutions in a critical way and proposing new ideas.
- You can communicate your results in a clear, concise and precise manner.

- You are involved and focused on results.
- You can work in a team and focus on the objectives of the team.
- You take initiatives to improve the functioning of the team.
- You take initiatives to improve your own skills.
- You are honest, loyal toward the institution and respect confidentiality.
- You can integrate yourself in a multidisciplinary research unit.

Other skills

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

Specific requirement

- 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 Defense.

Application

You will be working in a military environment. That is why everyone is expected to undergo a security verification. Please add to your application the filled out document. The form can be downloaded from: <http://www.rma.ac.be/nl/aanvraag-veiligheidsverificatie>

Send by email:

- a motivational letter;
- a CV
- a scan of your ID card (both sides);
- the filled out security document

to Mrs Arbia RIAHI (a.riahi@cylab.be) and to Mrs Helena BRUYNINCKX (erm-deao-rsw@mil.be).

Please mention clearly the reference of the project: "DAP22-13".

Application deadline: **28 January 2024.**

The interviews will take place at the Royal Military Academy, Hobbemastraat 8, 1000 Brussels. In case of non-Belgian application, on-line interviews will take place. The date and time of the interview will be communicated to the preselected candidates.

Miscellaneous

Contract

- Probable date of recruitment: **ASAP**, 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).

- Wage scale: NA11 (holders of a Master Degree) / NA21 (Ir or holders of a Master Degree in Engineering Sciences (Applied Sciences) or doctor's degree in the same area of expertise).
- Holiday pay.

Extra-legal benefits

- Possibility of receiving 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;
- 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 after 1 year of service at the latest;
- Additional holiday for all staff between Christmas and New Year;
- 26 days holiday / year (then from 45 years: +1 day holiday every 5 years) from the 1st year of contract + 3 days / year dispensation from service offered by the department;
- 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 of benefiting 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.

Points of contact

- Concerning the research project: to Mrs Arbia RIAHI (a.riahi@cylab.be)
- Concerning the recruitment modalities: Mrs Helena BRUYNINCKX (erm-deao-rswo@mil.be)
- For more information about the Royal Military Academy, see <http://www.rma.ac.be>