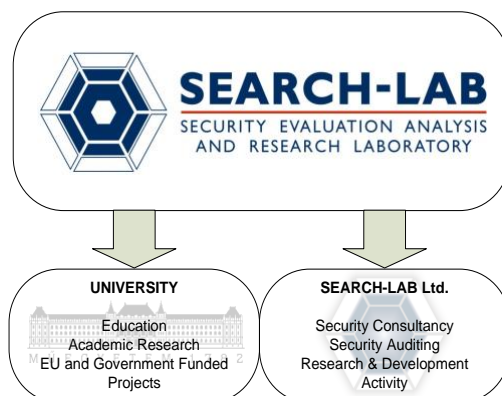# Research profile
SEARCH-LAB Ltd.

A BIT-AND-PIN LEVEL CYBERSECURITY RESEARCH LABORATORY

SEARCH Laboratory was established in 1999 at the Budapest University of Technology and Economics with a focus on **security research and development**.

In 2002 the leaders of the laboratory founded SEARCH-LAB Ltd. as a **spin-off company** to provide the legal and infrastructural background for dependable professional services. In the last two decades SEARCH-LAB Ltd. gained international market recognition in security testing and evaluation of several different **IoT and ICT products**, including operating systems, mobile devices, DTV conditional access systems and various other embedded systems.

As a result, the Lab has elaborated research expertise, methods and tools of security evaluation and testing, software security and malware analysis, and is an experienced partner of European R&D projects. Our track record of dozens of successful research grants goes back as far as the FP5 EU programmes. Around ten years ago the laboratory also extended its research capabilities with **machine learning**, **artificial intelligence** and **robotics** topics and integrated them into our cybersecurity solutions.

SCADEMY ACADEMIES

The secure product development is supported by our **SCADEMY Secure Coding Academy** that provides company-wide application security courses tailored for development groups. Our **SCADEMY Human-AI Symbiosis Academy** provides the essential building blocks for your organization's AI symbiosis. The academy has an extensive list of secure coding and AI-related courses in various programming languages and focusing on different industries and expertise. It is able to provide new and customized courses developed for and about the achievements of the project for internal and hosted external dissemination events as well.

RESEARCH PARTNER HIGHLIGHTS

For further references please visit our web sites:
SEARCH-LAB: http://www.search-lab.hu/
SCADEMY Secure Coding Academy: http://www.scademy.com/
SCADEMY Human-AI Symbiosis Academy: https://www.scademy.ai/

Research partnership

OUR MOST RECENT RESEARCH PROJECTS

AI4CYBER – The Ecosystem Framework of next generation AI-based services for critical system robustness, resilience, and appropriate response in the face of advanced and AI-powered cyberattacks. (Horizon Europe) https://ai4cyber.eu

CROSSCON – Cross-platform Open Security Stack for Connected Devices (Horizon Europe) https://crosscon.eu/

AssureMOSS – Assurance and certification in secure Multi-party Open Software and Services (H2020) https://assuremoss.eu/

ENSURESEC – End-to-end Security of Digital Single Market's E-commerce and Delivery Service Ecosystem (H2020) https://www.ensuresec.eu/

VESSEDIA – Verification Engineering of Safety and Security Critical Industrial Applications (H2020) https://vessedia.eu/

CPSwarm – Toolchain to design a swarm of autonomous cyber-physical systems (H2020) http://www.cpswarm.eu/

COSSIM – Novel, Comprehensible, Ultra-Fast, Security-Aware CPS Simulator (H2020) http://www.cossim.eu/

RESEARCH INTEREST and EXPERTISE

We are interested in joining initiatives in Horizon Europe where **cybersecurity** and **artificial intelligence** are critical aspect, and an experienced and reliable SME partner would fit to the consortium.

Research expertise and interests

- Cybersecurity evaluation and certification assisted by artificial intelligence methods
- Common Criteria, EUCC and lightweight evaluation methodologies
- Methods and tools for security evaluation and automated security testing
- Machine learning and artificial intelligence-based identification and correction of software vulnerabilities
- Security of autonomous robots and swarms

Possible contributions to projects

- Automated machine learning based source code corrections
- Artificial intelligence-based delta evaluation and delta certification tools development
- Post quantum cryptography and quantum communication (EuroQCI)
- Application security training, short term technical courses and scalable company-wide educational programs

CONTACTS

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For further references please visit our web sites:
SEARCH-LAB: http://www.search-lab.hu/
SCADEMY Secure Coding Academy: http://www.scademy.com/
SCADEMY Human-AI Symbiosis Academy: https://www.scademy.ai/