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## Discovering Romania's cybersecurity ecosystem

# Romania is at the forefront of technological innovation, especially in cybersecurity and artificial intelligence. Known for excellence in mathematics, science, and engineering,

this region is home to some of the world's brightest minds, constantly developing nextgeneration solutions. Investing in this thriving ecosystem is essential to driving global progress and addressing the digital challenges of the future.

Dan Berte, Chief Architect and Director of IoT Security, Bitdefender

#### Introduction

In Technology Report: understanding and advancing the UK/Romania opportunity, we identified cybersecurity as an area in which Romania has particular strength.

Alongside Cybersecurity Bootcamp 2024 – a programme delivered in partnership with Global Tech Connect – UK/Romania Business now spotlights Romania's cybersecurity ecosystem in this special sector snapshot.

#### About UK/Romania Business

UK/Romania Business is trade and investment evolved – a platform designed to drive targeted commercial success.

Anchored in London we concentrate on four areas where our effort, precisely applied, delivers the greatest impact

Technology Energy/Infrastructure Defence Financial Services

Each vertical is selected for its strategic significance, bilateral potential and where our value is amplified through cross-sector synergies.

Now incubating UK/Romania Tech Hub – a network of startups, investors, corporates and mentors to support companies as they scale, and connect businesses with the innovation they need – UK/Romania Business will adapt this approach to build communities and promote opportunities in its other key domains.

Follow us on LinkedIn or X, and subscribe to the UK/Romania Business mailing list.

#### About Global Tech Connect

**Global Tech Connect** (GTC) is the alliance of UK-based bilateral startup programmes, each supporting companies from their respective country scale to the UK. Partners include embassies, national trade agencies and private sector initiatives with GTC delivering activities that no one organisation would do itself.

Participation is open to other programmes that demonstrate an ability to support startups from their home countries, and which share the aims and values of Global Tech Connect.

Find us on LinkedIn and X or join the Global Tech Connect mailing list.



#### Cybersecurity Bootcamp 2024

Cybersecurity Bootcamp 2024 is a programme for startups from Europe and Israel offering product-based B2B/Enterprise solutions in cybersecurity. Delivered in two parts, 26-28 November online and 9-12 December in London, the Bootcamp is designed to introduce startups to the UK cybersecurity opportunity, and help them establish connections with the ecosystem organisations, corporates and investors needed to make their market entry a success.



26 startups from eight countries – four of these from Romania and Moldova – will participate in the online programme with 13, including Romania's Arcanna AI, then joining the London Delegation.



#### Cybersecurity Bootcamp 2024 - online and London delegation

#### Arcanna Al

Founded in 2019, Arcanna AI is transforming how Security Operations Centres (SOCs) and cybersecurity teams operate optimally by leveraging AI Assisted Security Operations Platform. Our platform integrates advanced AI and machine learning algorithms to empower security analysts and CISOs with real-time, actionable insights that improve both the speed and accuracy of critical decision-making processes.

Built on state-of-the-art natural language processing (NLP), machine learning, and human-in-the-loop systems our Al-driven system continuously learns from human feedback, adapting and evolving to better support analysts in identifying, prioritising, and mitigating security threats. While Al handles the heavy lifting of data analysis and triage, human expertise remains at the heart of decision-making.

arcanna.ai
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#### Cybersecurity Bootcamp 2024 - part of the online programme

#### NS-EDGE ns-edge.com

We use Predictive Generative AI to redefine Cybersecurity Observability learning the normal structure and rhythm of your network to detect threats and anomalies in realtime. By processing your data locally, as it is created, we reduce the load and potential costs associated with data transfer and storage.

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#### Pentra pentra.ai

Pentra automates report writing for pentesters. Developing a special CLI tool that monitors commands used during a pentest or audit a fine-tuned AI model gathers enough context to generate a precise description of the vulnerabilities found saving up to 20% of user time.

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#### Pinky Tech (Moldova) pinkycs.com

Pinky CyberSafe is a SaaS Platform tailored specifically for SME requirements: lack of knowledge in cybersecurity, limited resources and need for robust cybersecurity. Pinky aims to become one-stop Al-driven solution that will encompass tools and procedures that will shield these unprotected customers from potential threats while also increasing their cybersecurity awareness.

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#### Sketching Romania's cybersecurity sector

The general factors behind Romania's tech-sector success – a strong academic STEM tradition, its EU/NATO membership and a favourable cost-base for international tech companies setting up in the country – also apply to cybersecurity specifically.

As we described in *Technology Report* most of the value still comes from outsourcing and software engineering with product-led startups emerging as the ecosystem has matured and venture capital becomes available.

Meanwhile global operators including Crowdstrike, Fortinet and Palo Alto Networks have a presence in Romania with others like Eviden, VOIS (Vodafone Intelligent Solutions) and Smarttech247 also using Romania as a key location for their cybersecurity offerings.

For London-listed Smarttech247, a global cybersecurity company counting the Institute of Cancer Research amongst its clients, the decision to build its operations in Romania was clear – excellent quality of available talent, technical and cybersecurity capabilities in Romanian universities, convenient timezone, strong english language skills, good value, an EU and NATO member – but competition for the right workers especially from Big Tech, says CEO Raluca Saceanu, has become more intense. Smarttech247 is continuing to invest in its Cluj operations and is planning to open new offices in other Romanian cities in 2024.

Technology Report: understanding and advancing the UK/Romania opportunity

Locally, some notable cybersecurity service providers include Bit Sentinel (also backers of DefCamp, Romania's longest running cybersecurity event), Black Bullet, Cyber Smart Defence (part of the Stefanini Group), CybrOps, Cybourn, D3 Cyber, Dekeneas, Fort (featured in *Technology Report*), RevelSI and Safetech Innovations.



Two of these companies, Cybourn and Safetech Innovations, have a dedicated UK presence with Fort also expected to establish an office in Britain. Both Fort and Safetech Innovations are listed on the Bucharest Stock Exchange.

#### Romania's cybersecurity startups

An early success for the sector Romanian anti-virus product, RAV, was bought by Microsoft in 2003, but its most globally recognised cybersecurity company is Bitdefender.



Founded in 2001, **Bitdefender** provides cybersecurity solutions with leading security efficacy, performance and ease of use to small and medium businesses, mid-market enterprises and consumers.

While unfavourable general market conditions in 2022/23 delayed an expected IPO, Bitdefender's future New York listing is likely to confirm a valuation over \$1bn making it Romania's second publicly traded unicorn alongside UiPath.

A further potential catalyst for the ecosystem, in April 2024 Bitdefender launched Voyager Ventures, an early-stage investment vehicle focused on cybersecurity, data analytics and automation startups, acting both as a lead investor and as a co-investor depending on their development stage.

In that broader startup community we have identified 16 Romanian-origin companies developing cybersecurity products – amongst them the several selected for the Global Tech Connect Cybersecurity Bootcamp 2024.



#### **UK/Romania connections**

Bitdefender's major investor is UK-based private equity firm Vitruvian Partners, acquiring its stake in 2017.

UK VC have also invested in Romanian cybersecurity startups with both Seedcamp and Notion having a position in Cyscale. Meanwhile OutThink, a UK-based startup with a Romanian co-founder, added Romanian VC GapMinder to its cap table in 2022.

Separately, Fortbridge is a wholly UK-based cybersecurity services company with two Romanian co-founders.

## OutThink FORTBRIDGE

#### The academic foundations

Romania's excellence in STEM underpins its technical talent, including in cybersecurity, with several leading universities and institutes offering specialised training in the discipline.

DNSC, the country's cybersecurity directorate, highlights **12** courses at eight of the country's universities dedicated to the subject.

Understanding cybersecurity education in Romania

Cybersecurity specific education is focused mainly at master's level with several top universities in Romania including my own, Babeş-Bolyai University, currently offering programmes dedicated to the subject. Discussions are also ongoing within the academic community about creating undergraduate programmes although even in their absence most universities have incorporated specialised cybersecurity modules in the computer science curricula.

The master's programme at our university, UBB, has strong partnerships with several major companies in the field. Two notable examples are Computacenter, through whose financial donation to the university scholarships for cybersecurity students can be provided, and Bitdefender, which delivers a semester-long course on Extended Detection and Response (XDR) to our master's students.

Cluj, the home town of UBB, is an important regional and national IT hub hosting a large number of IT companies. When we developed and accredited our master's programme we collaborated with industry representatives to discuss the curriculum and ensure that graduates acquire the competencies needed to meet industry demands.

This has also allowed the university to partner with many of these organisations and offer internships to students, some of which do focus specifically on cybersecurity. And our university is not unique in this regard; most major Romanian universities have similar collaborations.

As is the case worldwide, there is a shortage of specialists in the field of cybersecurity, along with a general lack of awareness at the societal level. We must increase educational efforts and expand the number of programmes in cybersecurity to train more specialists.

From my point of view, we need to address various dimensions of cybersecurity education. It's not enough to prepare only IT specialists in this field; we also need to focus on an "age dimension".

This means starting cybersecurity education from an early age, such as in primary school, where children can be taught about topics like cyberbullying. At the same time, we should extend our efforts to seniors and retired citizens who are among the most vulnerable social groups when it comes to cyber threats.

Additionally, in the context of increasing digitalisation in society, we must focus on education in this field for general business and home users. Decisionmakers in SMEs and public sector institutions also need to understand the importance of implementing and delivering educational programs for the personnel in their organisations.



### UK/Romania Business

#### Government and public bodies

The panoramic nature of cybersecurity – as a defence, security and policing matter, as a risk to critical infrastructure and public services, and in its potential to cause consumer harm – inevitably distributes responsibilities for policymaking, operations, regulation and enforcement across government, and through collaborations with the private sector.



Our interest centres on two organisations, DNSC and MCID, those dealing most directly with Romania's technology ecosystem.

The National Cybersecurity Directorate (DNSC) is the country's central authority for cybersecurity. Formed in 2021 to replace CERT-RO it consolidates and coordinates Romania's efforts across the issue. Falling under the Prime Minister's office, DNSC is responsible for preventing, analysing, identifying and reacting to cyber incidents.

MCID, the Ministry for Research, Innovation and Digitalisation, meanwhile both takes a lead in legislating on cybersecurity matters and in supporting the financing and development of strategic research initiatives including those strengthening Romania's ability to respond to cybersecurity challenges. Also noteworthy is Romania's hosting of the European Cybersecurity Competence Centre (ECCC) in Bucharest, a centre that manages €50 billion worth of programmes for EU Member States' cybersecurity capabilities, and testament to the country's growing strategic importance to the EU cybersecurity landscape.



#### Ecosystem organisations and platforms

Romania has an increasingly vibrant cybersecurity ecosystem, developed through a mix of government initiatives, private sector activities, academic involvement, and international partnerships.

We have started to pay special attention to promoting activities tailored to diverse groups. Initiatives like the Youth Ambassadors or Mentorship programmes, targeted conferences, workshops, roundtables, podcasts or webinars, attract not only those familiar with cybersecurity, but also new audiences, and inspire diversity in the field.

Octavia Lojniță, Vice President for Education, Women4Cyber Romania

Events like DefCamp – one of the oldest and largest cybersecurity conferences in Eastern Europe, held annually in Bucharest in November – and the Bucharest Cybersecurity Conference, co-organised by DNSC, draw significant regional and commercial involvement.

Outside of Bucharest, DefCamp also now holds an event in Cluj and Timisoara plays host to a **Cyber Forum**.

CyberEDU, part of the broader DefCamp network, and SISC meanwhile provide links to the education sector, while ECYBRIDGE, a project led by the Maritime University of Constanța, has as its goal strengthening synergies in defence and civilian cybersecurity.



#### Diversity in cybersecurity

Speaking to UK/Romania Business as part of this report, Fraga Țariuc, President, Women4Cyber Romania noted "The underrepresentation of women in cybersecurity continues to be a significant challenge with women comprising less than a quarter of the workforce. To address this, Women4Cyber Romania are dedicated to creating spaces that encourage meaningful connections, knowledge sharing, and collaboration with leading professionals in the field. Our mission is to create lasting change, and we believe that every new member strengthens our community and helps us drive that transformation forward." Orsolya Bakó, its Vice President for Regional Development, continues "nationwide outreach is a core tenet for Women4Cyber Romania, as it allows us to extend our mission beyond major urban centres and create inclusive opportunities across the country. By establishing local branches, we can address the unique cybersecurity needs of each region, engage a broader audience, and empower more women to join and contribute to the cybersecurity field. This expansion is not just about growing our presence; it's about building resilient communities. We aim to foster a national network of skilled, motivated, and connected women who will shape the future of cybersecurity in Romania."

#### Discovering Romania's cybersecurity ecosystem – takeaways

- top-tier engineers and ethical hackers are amongst Romania's strongest cybersecurity assets
- Romania has benefitted from being a cost-effective destination for highquality tech services
- government has played an important role through development of strategic policies, its EU integration and NATO involvement
- the rise of companies like Bitdefender is paving the way for a flourishing startup ecosystem with increased global visibility
- participating in specialist programmes like Global Tech Connect Cybersecurity Bootcamp 2024 is an effective means of helping Romanian startups scale internationally.

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#### About the Author

Dr David Webster is the Founder of UK/Romania Business, an organisation dedicated to building bilateral and regional commercial opportunities in technology, defence, energy/infrastructure and financial services, and Co-founder and Managing Partner of Global Tech Connect, the alliance of UK-based bilateral startup programmes, bringing these together to better support tech companies from its partner nations enter, learn from or scale in the UK.

A government affairs professional by background he first visited Romania in 1999. His other roles include Advisor (Romania), Foundation for Jewish Heritage and providing Secretariat to the All-Party Parliamentary Group for Romania.

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