

Dr. Axiel Yaël Birenbaum

cybersecurity consultant

📍 Sweden|Canada|Switzerland ✉ ayb@aybirenbaum.com ☎ +46 79 304 92 61

🌐 linkedin.com/in/aybirenbaum/ 🗣 French|Canadian

Independent cybersecurity consultant offering tiered services to SME from cybersecurity audits up to CISO on demand.

Professional experience with **pentesting** (2 years) | **machine learning** (6 years) | 15+ years with **Linux & High Performance Computing**, leading projects, publishing and internationally presenting scientific research | 4 years working for US & Canada **governments** | **PhD** in quantum physics | Fluent in English & French, Swedish A2.

</> PROJECTS

Independent cybersecurity consultant (professional) 2023 – present

Various EU/Swiss companies under NDA

Penetration testing incl. **network infrastructure** & web app security, **threat detection**, **vulnerability management** & exploitation, mitigation strategies, **security governance**, hardening advice, **recommendations on priority allocation of resources**. GDPR compliance.

Red Team, Blue Team & Analysis (portfolio) 2022

Reconnaissance, **vulnerability analysis & management**, and exploitation of networks. Incident response: monitored, identified and contained the attacks. Provided cybersecurity **risk & compliance**, and made recommendations to harden the systems.

Azure Lab Cloud Secure Configuration & Attack (portfolio) 2022

Build a cloud network using Microsoft Azure applying **defence-in-depth** (network & infrastructure security, risk & compliance) methods, then attacked it. Identified the cloud-security vulnerabilities and hardening pathway.

Machine learning (Python) to by-pass expensive computations (professional) 2019

Developed databases using **automation** on Jupyter to train & test deep learning models, ran on Google Colab to use their Tensor Processing Units (TPU).

Monte Carlo calculations developed in C++ (professional) 2014

Co-wrote **highly parallel code** for calculations on **supercomputers**, leading to a peer-reviewed paper ☑.

🔧 TECHNICAL SKILLS

Cybersecurity (2 years)

- OSINT
- BurpSuite
- Wireshark
- Metasploit
- OWASP/Zap
- Splunk & ELK

Other (15+ years)

- Project Lead
- High Performance Computing
- International Public Speaker




Programming (10+ years)

- Python
- C/C++
- automation w/ YAML
- bash
- Machine Learning (Deep Learning)





Operating Systems (15+ years)

- Linux (incl. Kali & Parrot)
- MacOS/OSX
- Windows (incl. server) Active Directory



WORK EXPERIENCE

NRC - National Research Council of Canada 	2018-12 – 2020-03
<i>Postdoctoral Research Fellow</i>	Ottawa, ON, Canada
<ul style="list-style-type: none">- Developed a deep learning model to make predictions on materials, using Big Data and bypassing expensive computations- Built training & testing linux databases from my own calculations	
DoE - Oak Ridge National Laboratory 	2016-08 – 2018-11
<i>Postdoctoral Researcher</i>	Oak Ridge, TN, USA
<ul style="list-style-type: none">- Modelled, predicted, and measured properties of materials at the atomic scale, both experimentally and theoretically- Recognized with two Special Performance awards	
MIT - Massachusetts Institute of Technology	2015-11 – 2016-04
<i>Visiting Scientist</i>	Boston, MA, USA
<ul style="list-style-type: none">- Exchanged knowledge with team by presenting work- Taught doctoral students high performance computing	
ETH Zurich 	2012-02 – 2015-10
<i>Doctoral Researcher</i>	Zurich, Switzerland
<ul style="list-style-type: none">- Linux shell pre-/post- processing data for mathematical models- Published three peer-reviewed research paper and presented at eleven international conferences, twice as an invited speaker- Lead a team of researchers to design predictive models	

EDUCATION

Certificate of Cybersecurity	2022
<i>University of Toronto</i> 	Canada
6 months hands-on bootcamp	
Doctorate in Computational Theoretical Material Physics	2010 – 2016
<i>ETH Zurich (Started at Trinity College Dublin)</i> 	Switzerland
Masters of Science in Quantum Fields & Fundamental Forces	2008 – 2010
<i>Imperial College London</i> 	UK
Bachelor of Science in Physics	2005 – 2008
<i>King's College London</i> 	UK

AWARDS

Featured Fellow (National Research Council of Canada) 	2018
Special featured profile. Less than 10% fellowships awarded nation-wide.	
Special Performance Award X2 (Oak Ridge Nat. Lab.)	2017
Going above & beyond in research, science outreach, and being a "good citizen". Awarded two years.	
Postgraduate Research Scholar 	2010
<i>Trinity College Dublin</i>	
Funding awarded in recognition of promising research	