

Petr Hummel

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In IT since 1997, neural networks since 2001, security since 2002. Built a private e-health platform and a digital production line for a regulated laboratory group; now adoption of NIS2, the EU AI Act and the CRA at MSD.

SELECTED PROJECTS

- **AI governance prototypes, 2026.** An operating regime for AI systems at portfolio scale: triage, facts-based classification with a replayable trace, threat profile mapped to OWASP LLM and Agentic Top 10, MITRE ATLAS and NIST AI 100-2, security depth by tier, requirement sets that follow how a system is sourced with an E0 to E4 scale for supplier evidence, and gates that reserve in-depth assessment for the cases that need it. Mapped to ISO/IEC 42001, ISO 31000 and 42005; EU AI Act and other jurisdictions as parameters. My own method, built in my own time in a personal sandbox on typified data; shown on request.
- **Advanced Prevision group (aiomica a.s., NutriMed Lab), 2021 to 2023 - e-health start-up; co-founder of Advanced Prevision.** E-health platform in production on an in-house private cloud: B2C e-shop, patient and B2B portals, laboratory information management system for a biochemical laboratory, instrument and state-registry integration. A digital production line for nxDROP blood-sampling kits: assembly wizard with barcode scanning, lot registry, traceability from every kit to every component; kits notified with SÚKL (2023).
- **Gut microbiome PoC, 2023 (Advanced Prevision).** 16S rRNA sequencing of gut microbiome samples on Oxford Nanopore MinION with an extended reference database built in-house; interpretation with an LLM. Proof of concept, not taken to market.
- **Privacy Experts ISMS, 2020 to 2024 - architect and ISMS manager.** Designed, implemented and ran the firm's information security management system; certified to ISO/IEC 27001:2013 by DNV GL (UKAS accredited) with a scope built on ISO/IEC 27701:2019, valid February 2021 to February 2024. Certificate no. 10000422761-MSC-UKAS-CZE.
- **VisualNnet, 2001.** Master's thesis at CTU Prague on how self-organizing networks learn: Hard Competitive Learning and Dot Product SOM, with the author's own proofs for the latter, and a Java applet animating every phase of an iteration. Rebuilt for the browser in 2026 from the thesis, with verification notes and the unofficial English translation: protintel.com/visualnnet

EXPERIENCE

2025 to date	MSD Czech Republic s.r.o., Prague	Associate Director, Information Security Manager Lead EMEA. Leads the regional team of EMEA information security managers; adoption of NIS2, the EU AI Act and the CRA. Fixed term (maternity cover) to 02/2027.
2018 to 2024	Privacy Experts s.r.o., Prague	Co-founder, managing partner, CISO. Consulting for banks, insurers, healthcare, logistics. Certified ISMS (above). Risk programmes, security architecture, cryptography reviews, penetration tests, audits. Owned the e-health venture aiomica a.s. until its transfer to Advanced Prevision in 2023. No activity since 2024.
2019 to 2023	aiomica a.s.; Advanced Prevision s.r.o.; NutriMed Lab s.r.o., Prague	E-health group. Co-founder of Advanced Prevision (2021), which became the group holding; CIO and CISO of the group; board roles in all three companies; quality manager for the production line. Exited in 2023. See above.
2014 to 2018	Novartis, Prague	Information risk and security manager. Risk assessments of global IT projects, GxP.
2002 to 2014	ANECT a.s., Prague	Security consultant and architect. PKI, IPS/IDS, HSM, security architecture, penetration testing, forensics. Enterprise and public sector. NBÚ (Czech National Security Authority) clearance, Confidential, held during this period.

2001 to 2002	CRF Box Czech s.r.o., Prague	Production engineer.
1997 to 2001	Aquasoft s.r.o., Prague	System and network administrator, alongside university studies.

STANDARDS AND REGULATION

Implemented or certified against: ISO/IEC 27001, ISO/IEC 27701, GxP and 21 CFR Part 11, IVDR device notification.

Designed and assessed against: EU AI Act, NIS2 and the Czech Cybersecurity Act, CRA, GDPR, ISO/IEC 42001, 42005 and 23894, ISO 31000, NIST AI RMF, NIST SP 800-37 and 800-53/53A, NIST CSF, OWASP Top 10 for LLM and Agentic applications, MITRE ATLAS and ATT&CK, GAMP 5.

Working knowledge: DORA, PCI-DSS, TISAX, Common Criteria, HL7 FHIR, DASTA.

CERTIFICATIONS

CISSP	ISC2 #102568	since 2007, valid to 02/2028
CRISC	ISACA #1108585	since 2011, valid to 12/2026, renewed annually
CEH	EC-Council #ECC64533749074	since 2016, valid to 01/2028
ITIL v3 Practitioner	AXELOS #GR772001195PH	
ISMS Lead Auditor course	DNV #29801	2013

EDUCATION AND LANGUAGES

Czech Technical University in Prague, Faculty of Electrical Engineering, Ing. (MSc equivalent), 2001. Thesis: Neural Network Learning Visualization.

Czech (native), English (professional).

SPEAKING AND COMMUNITY

2026	CZECRIN, Brno	"AI versus data and clinical research", for clinical research staff
2026	Czech Electrotechnical Association (ELA), general assembly, Mikulov	"A CEO blackmailed by artificial intelligence"
2026	AMPER 2026, Brno, AMPER STAGE	"From negotiating with ransomware extortionists to the abuse of AI"
2025, 2026	Kyberprostor na hraně zákona	Initiated and co-organised this cybersecurity conference for secondary-school and university students; 2025 at SSPŠ Smíchov, 2026 at CTU FEE with NetAcad (Jaroslav Burčík), speaking on the technical background of ransomware
2018	ISACA CRC, IT Governance XV, Mikulov	"How to face today's cyber attacks effectively"

Drafted with an AI assistant; facts and wording are the author's. Transparency per Article 50 of the AI Act: not required for a CV, practised anyway, as a small advertisement for the Act.

I took neural networks apart in 2001 to understand how they learn.

Today I take AI apart to understand what it did and why.