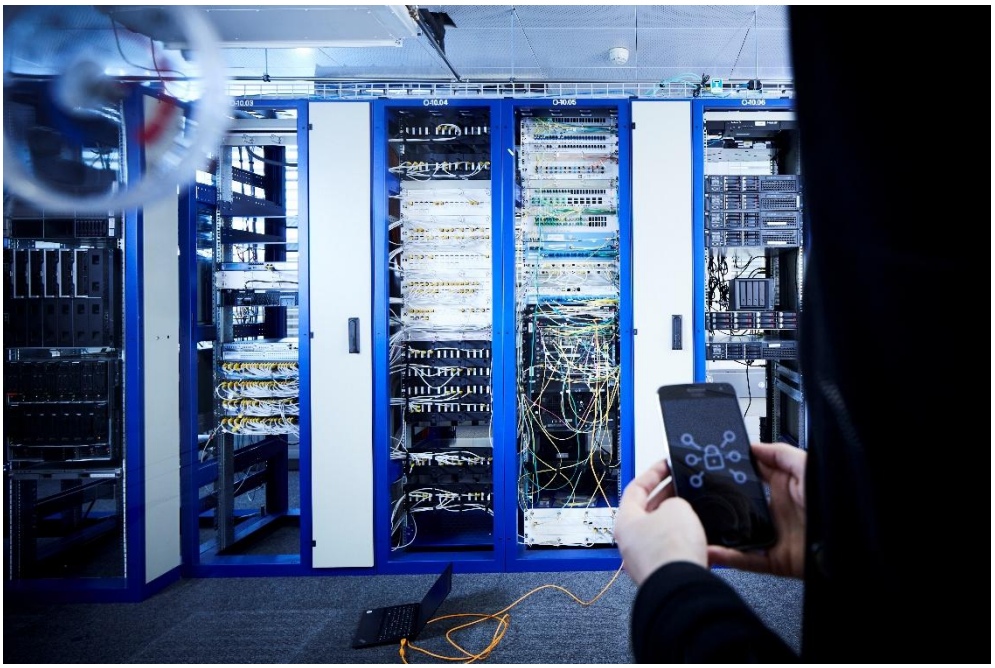
Bern University
of Applied Sciences



Institute for Cybersecurity and Engineering ICE

"Trust and collaboration are essential for effective research and development to protect society from cyber threats."

Bruce Nikkel, Co-Head ICE

"Together with our partners, we work to combat cyber threats—through collaboration, data-driven approaches, and innovation."

Endre Bangerter, Co-Head ICE

Institute for Cybersecurity and Engineering ICE

Our core competencies encompass cybersecurity and the protection of privacy. We collaborate with external partners to analyse and investigate cybercrime, develop secure solutions and provide advice on cybersecurity. Our activities encompass fundamental research, applied research and development, and a range of consultancy services.

Expertise

- Cyber threat intelligence
- FinTech security
- Privacy by design
- Secure e-voting
- Wireless communications systems
- IoT security
- Hardware security
- Software engineering and development
- Malware analysis and reverse engineering
- Disk, memory and network forensics
- Development of high frequency electronic circuits
- Development of radar and antenna systems
- Development and applications of software-defined radio (SDR)

Team

Our institute comprises an experienced team of professors and research associates. Our innovative, solution-oriented approach is underpinned by sound scientific principles. We work with national and international partners from industry, politics and business and are open to new opportunities for collaboration.

Contact

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Research groups

Cyber threat intelligence

We collaborate closely with industry in the field of data and analysis-driven cyber defence.

FinTech Security Group

Development of secure and open payment systems: we focus on
research on virtual and crypto currencies, and conduct investigations and analyses in the field of cyber fraud.

E-Voting Group

Research, training, design and development in the field of digital democratic processes. We specialise in the provision of e-voting and e-collecting protocols for the digital collection of signatures. Such protocols facilitate research into secure digital access to grassroots democratic processes in the private sector and in politics. We specialise in Swiss processes.

Wireless Communications & Secure Internet of Things

Design and hardware development of circuits operating at frequencies up to 20 GHz for wireless communication systems, antennas and radar systems; based on traditional high-frequency technology and/or FPGA and CPU-based SDRs. Development and simulation of antenna systems. Our facilities are equipped with a state-of-the-art HF laboratory capable of performing measurements up to 90 GHz. Focus on the development of a generic sIoT platform to maximise reusability across IoT projects. Provision of energy-efficient and bandwidth-efficient transmission between devices and sensors.

Hardware Security Group

This research group focuses on threats and risks to cyber-physical systems, hardware devices and electronic components.

Software Engineering and Development Group

With a focus on agile methodology expertise, we develop software solutions such as intuitive user interfaces and augmented reality projects.