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Advanced security technologies for a hyper-connected society: integrated CST approach

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Modern context

- More incidents
 - DDoS, IoT, data breaches
- Regulatory developments
 - NIS Directive, Sector-specific laws in Japan
- Democratization of cybersecurity research
 - Open datasets, competitions
- Diversifications, sector-specific efforts
 - Industrial control systems
 - Financial, energy, transportation, ...

Challenges

- Limited adoption of standards
 - Open source tooling as key
- Agility against new types of threats
 - Attacks without malware
 - Steganography in Command & Control
 - IoT botnets
- Same old problems, hard to justify research
 - Use of retro malware
 - Classic but high-impact protocol vulnerabilities

Opportunities

- Recent advances in Cyber science & technology
 - Privacy preserving algorithms
 - Deep learning
 - Lightweight containers
 - Agility and resilience in IT service delivery
 - Automatic vulnerability discovery & patching
 - Automated software diversity