Research agenda Cyber Security Noord Nederland

Legend

- Research theme
- Research group addressing the research theme
- Relevant Sector
- User Profile

Relations with National Cyber Security Research Agenda Pillars

- Governance
- Attacks
- Privacy
- Defence
- Design

Privacy by Design and by Default. Research on:
a. Understanding the implied requirements,
b. Understanding the responsibilities,
c. How to include in application and process development.

| - RUG faculty of Law
- Hanze Juridisch AO | - E-health
- Public safety
- Transportation | SMEs, larger organisations, administrative bodies, public bodies. |

Privacy Enhancing Technologies (PET's). Research on:
a. How to preserve privacy throughout the lifecycle of personal data (production, processing, storage, disposal).
b. Privacy-preserving variants of Machine Learning algorithms.

| - RUG Faculty of Science and Engineering
- Hanze New Business & ICT
- TNO Cyber Security & Robustness | - Government and public authorities
- E-health | End users that deal with protection of privacy, need to comply to privacy regulation and need insight which solutions are available for which step in the design cycle. |

Distributed Ledger Technology (DLT) and Blockchain.
Research on application of DLT and blockchain in various domains (mostly medical) to address the issues regarding:
a. Data ownership control
b. Self-sovereign identities
c. E-voting
d. Verifiability
e. Accountability

| - RUG Faculty of Science and Engineering
- RUG Faculty of Economics and Business
- TNO Data ecosystems
- TNO Cyber Security & Robustness | - Government and public authorities
- E-health
- Supply-chain | Various users to address the issues regarding data ownership control, self-sovereign identities, 'e-voting', verifiability, accountability and alike. |

Human aspects of Information Security. Research on human aspects such as:
a. Security knowledge,
b. Risk perception,
c. Digital skills,
d. Behaviorial change.

| - RUG Behavioral and social sciences
- TNO Human Factors
- NHL cybersafety (Thorbecke)
- Noorderpoort | - Government
- Law enforcement
- Citizens | SMEs, larger organisations, administrative bodies, public bodies. |

Software Security testing. Research on:
a. The efficient integration of security testing techniques into modern software development practices such as CI/CD: scalability challenges in automation, flexible integrationof security tools.
b. Fuzzing (e.g. API security testing) as a testing technique.

| - RUG Faculty of Science and Engineering
- Hanze New Business & ICT
- TNO Cyber Security & Robustness
- Eurofins | - Law enforcement
- E-health
- Financial | SMEs, larger organisations, administrative bodies, public bodies. |

International responsibility for cyberoperations and the issue of technical/legal attribution. Research on:
a. International/State responsibility and interpretation of applicable (international) legal rules.
b. Technical aspects of the process of attributing cyberoperations to State actors.
c. Circumstances and extent of legal attribution and legal consequences of invoking responsibility.

| - RUG faculty of Law
- RUG Faculty of Science and Engineering
- NHL Maritime cybersecurity (ICT) | - Government
- Law enforcement | International organizations, central and local governments, law enforcement agencies. |

Digital security of events and smart cities. Research on:
a. Privacy, safety and governance aspects of digital security.
b. Legal possibilities, responsibility in the chain.

| - NHL cybersafety (Thorbecke) | - Public Safety
- Government and public authorities
- Law enforcement
- Digital Infrastructure | Governments and municipalities, police, companies involved in events and smart cities. |

Administrative and (criminal) approach to online insecurity and cybercrime. Research on:
a. Online enforcement.
b. Privacy issues in enforcement and innovative legal routes.
c. The balance between the role of government, citizens (self-regulation) and social media platforms.
d. The balance in regulation on European, national and local level.

| - NHL cybersafety (Thorbecke) | - Online law enforcement
- Public safety | Governments, municipalities, police. |

Cybercrisis Research on different aspects of cybercrises such as:
a. Prevention,
b. Foresight,
c. Simulation,
d. Governance,
e. Communication.

| - RUG Behavioral and social sciences
- NHL cybersafety (Thorbecke)
- NHL Maritime cybersecurity (ICT) | - Public Safety
- Government and public authorities
- Digital Infrastructure
- Maritime | Governments and municipalities, police, companies and organizations that have cybercrisis processes. |

Security of Machine Learning and AI and ML/AI for security. Research on:
a. Identification of new attack families and development/evaluation of the defence mechanisms for them.
b. Finding new applications of ML/AI techniques to security problems.

| - RUG Faculty of Science and Engineering
- TNO Cyber Security & Robustness | - E-health
- Financial
- Public Safety | Governements, Law enforcement, (large) organizations, vendors. |

Threat actor knowledge. Research on:
a. The profile of threat actors (State and Non-state).
b. The modus operandi of threat actors.

| - TNO Cyber Security & Robustness
- NHL Maritime cybersecurity (ICT) | - Maritime
- Public Safety
- Government and public authorities | Governments, Law enforcement, (large) organizations,all organizations in the maritime supply chain. |

Security of converged OT and IT environments. Research on:
a. Security dependency on OT/IT security.
b. Effective security implementaiton in converged IT/OT environments.

| - TNO Cyber Security & Robustness
- NHL Maritime cybersecurity (ICT) | - Maritime
- Water sector
- Energy sector
- Industrial sector | All organizations in the maritime supply chain, energy companies, drinking water and watermanagement companies, governments and municipalities. |

Implications of cybersecurity developments on human rights.
Research on (how to deal with):
a. Consumer rights,
b. Intellectual property rights,
c. Fundamental rights.

| - RUG faculty of Law
- Hanze Juridisch AO | - Government
- Human rights bodies | Governments, human rights organizations |

PROGRAMMA CYBERSECURITY NOORD-NEDERLAND

Noorderpoort

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NHL STENDEN

THORBECKE ACADEMIE
NHL STENDEN

university of groningen

eurofins

Hanze University of Applied Sciences Groningen

TNO innovation for life