Poster session

Konstantinos E. Kampourakis

Digital Twins for Incident Detection & Response

Konstantinos E. Kampourakis (konstantinos.kampourakis@ntnu.no, Gjøvik)

Motivation:
- Increasing cyber threats in CI
- Reactive and passive defenses
- Need for proactive, DT-enabled solutions

Approach:
- SLR
- Framework design
- Validation using existing datasets
- Application in real-world scenarios

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Gizem Erceylan

Digital Twin-Assisted Threat Modeling Framework for Industrial Control Systems Cybersecurity

PhD Candidate: Gizem Erceylan
Supervisors: Vasileios Gkioulos, Aida Akbarzadeh, Sokratis Katsikas, Sandeep Pirbhulal

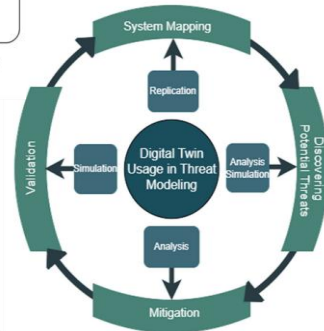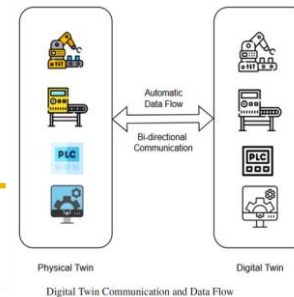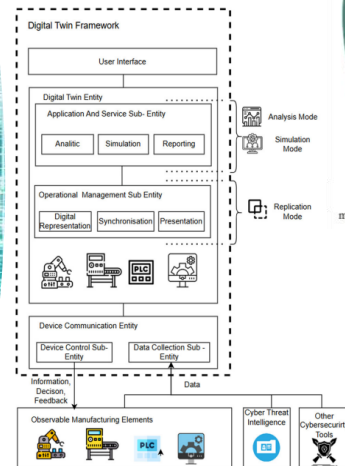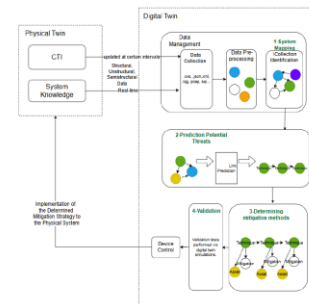Digital Twin Communication and Data Flow

Illustration of different mode of the digital twin (inner circle) mapped to the four basic stages of threat modeling (outer circle)

Adaptation of a digital twin-assissted threat modeling framework based on ISO 23247 with distinct operational modes

Suggested digital twin- assisted threat modeling structure

Jessica Barbosa Heluany

What makes us scream in VM?

7

Camille Sivelle

Camille Sivelle, PhD candidate, NTNU

Balancing Privacy and User Experience in Virtual Reality

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Kaja Fjørtoft Ystgaard

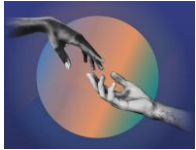# Cybersecurity that embed ethics-by-design: holistic process

"The best way to make an impact is to make the risks more tangible. This means clearly showing where ethical harms occur and backing it up with scientific evidence..."

Jack Clark, Anthropic founder

Assessing Ethical Risks and Challenges of EdTech in Norwegian K-12 Education

Ambiguous ownership, accountability and transparency
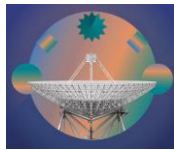
Too much surveillance

Lack of user awareness, literacy and autonomy

Tools that cause harm

Kaja Fjørtoft Ystgaard, PhD (kaja.ystgaard@ntnu.no)

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Johannes Lorentzen

Detecting Crime in the Banks

Johannes Pippidis Lorentzen

Problem:

How should one build Anti-Money Laundering and Anti-Terrorism Financing Systems in Banks?

Detection
What detection capabilities are truly needed?

System
How should AML/CFT systems be built?

Governance
How should the governance of detection systems be structured?

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Suneet Kumar Singh

Smart 5G Control with AI and RIC

- Uses **AI** and **O-RAN** to make **private 5G** networks more **intelligent** and **secure**

- Supports a range of applications including mission critical communications (**MCX**) and **smart grids** to improve **QoS** and overall **performance**

- Provide a reusable **AI-driven testbed** for advance research, experimentation, and development

Sebastian Gilje Grøsvik

Cross-Vendor 5G gNB Comparison

5G gNB   5G Core
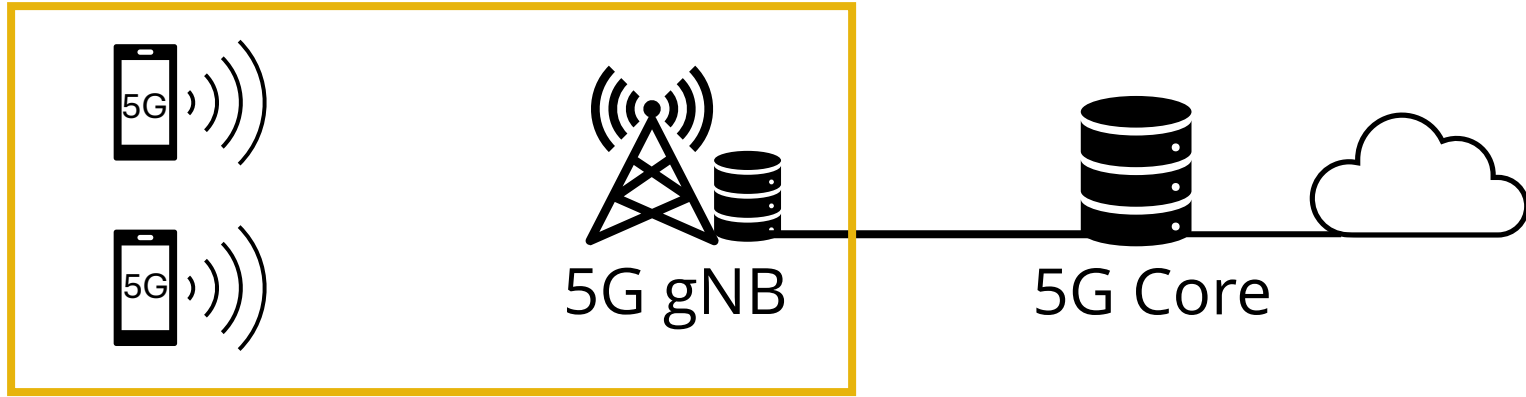
➢Comparing RAN performance across 4 different gNB vendors.
   ➢2 Open-Source: srsRAN & OAI
   ➢2 Commercial: Nokia & Askey

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Trond Vatten

Operators *Sharing* Network Infrastructure?

Investigating network sharing using cloud-based architectures

The future "Nødnett" (emergency networks) will be built on **commercial telecom networks**

How should the operators cooperate?

19
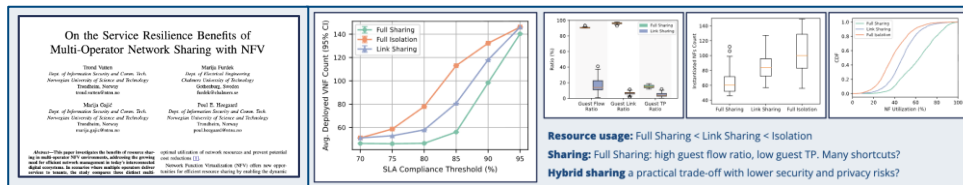
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Karina Norfolk
Tuva Westad

Supply Chain Vulnerabilities in the Norwegian Power Grid

Uncovered serious safety risk – Chinese electric buses can be stopped and turned off from China

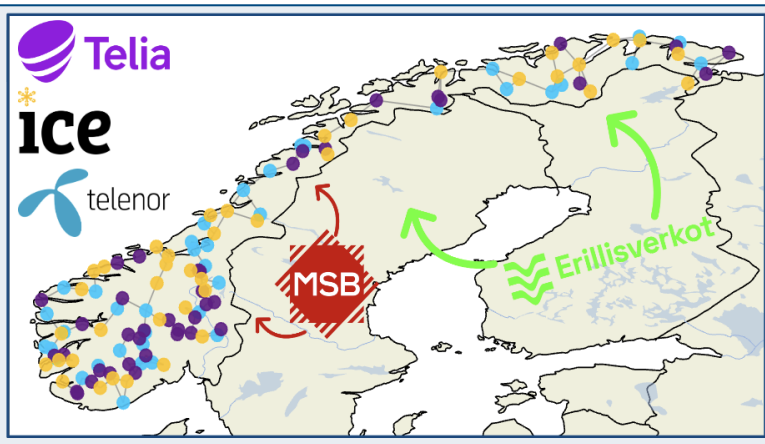A security test Ruter has conducted revealed that Chinese electric buses in Norway can be controlled from China.

What are the consequences if the Norwegian power grid has similar security flaws?

IT/OT Integration opens new vulnerabilities

We seek interviewees that are stakeholders in the Norwegian power grid

Vahiny Gnanasekaran

A model-driven approach to define a security-safety incident response plan

CSIRT member

Control room operator

How can we represent the interaction between security and safety roles to ensure a swift response to a cyber attack with physical consequences?

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Linda Aandalen

Linda T. Aandalen, Ph.D. candidate

"Cybersecurity training does not work!"

Do you agree or disagree with this claim?

Ming-Chang Lee

Real-Time Online Time Series Anomaly Detection

Ming-Chang Lee (Leo)

- Anomaly detection approaches for multivariate and univariate time series

- Our approaches are highly valuable that can

  - Detect anomalies in real time with high accuracy

  - Provide immediate response

  - Operate in a lightweight manner

  - Work without labelled data or offline model training

  - Require no domain knowledge or human intervention

  - Provide interpretable results

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