

HORIZON EUROPE CALLS 2023/2024

CLUSTER 4 DIGITAL, INDUSTRY AND SPACE



NTNU DIGITAL IN EUROPE: LIST OF CALLS WITH
THEIR RESPECTIVE INTERESTED NTNU RESEARCHERS

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INTRODUCTION



Dear Reader,

Are you looking for the best researchers with whom to collaborate on Horizon Europe cluster 4 calls? Then please, read on.

At NTNU, the Norwegian University of Science and Technology, we have matched our researchers to the upcoming Horizon Europe 2023/2024 calls, based on both their expertise and the industry relations they can bring to the table.

As the largest university in Norway, we can be a powerful partner and collaborator. With more than 85 funded projects, of which 53 are already signed (accounting for more than € 32 million in funding) at the time of writing, we are setting even more ambitious targets for Horizon Europe 2023/2024 and going forward.

This document is one of six prospectuses that outline areas of expertise for - and of interest to - NTNU researchers, for each of the upcoming six clusters of Horizon Europe.

They are living documents. Even if you do not find an exact match, our research community would be thrilled to open a collaborative dialogue with you. Just ping a message to one of our institutional contact points, like NTNU's Brussels Office.

Together, we can create true "knowledge for a better world"

Tor Grande

Pro-rector of Research



KNOWLEDGE FOR A BETTER WORLD

Knowledge provides people with opportunities and influence, as well as a foundation for making wise choices. Knowledge inspires and challenges. It changes attitudes, mindsets, and how we perceive the world around us. Informed debate strengthens our democracy. NTNU's activities should benefit society as a whole and society can trust that our findings comply with best scientific practice.

Knowledge and technology development create opportunities for increasing sustainable value creation and finding answers to major challenges. Through the United Nations, the world has agreed on 17 Sustainable Development Goals. NTNU will contribute actively towards achieving the Sustainable Development Goals.

NTNU's strength is our competence in science and technology combined with academic breadth and interdisciplinarity.

ABOUT NTNU



NTNU is a university with an international focus, with headquarters in Trondheim and campuses in Ålesund and Gjøvik. NTNU has a main profile in science and technology, a variety of programmes of professional study, and great academic breadth, including medicine, architecture, and entrepreneurship.

KEY NUMBERS FOR 2022

NOK 10 billion
annual budget

44 170
students

7761
FTE

412
doctoral degrees

NTNU offers 397 programmes of study (2022), as well as continuing and further education. The university has the main responsibility for higher education in technology in Norway, and largest in engineering, teacher education and architecture. NTNU aims to be a national hub in programmes of professional study.

NTNU is the institution awarded the most funding from the Research Council in Norway, as well as being granted with 255 signed projects and a total funding of more than €141 million from Horizon 2020. Moreover, NTNU is a host or partner for 46 major research centers (SFF, SFI, and FME), and has internal initiatives to develop and recruit top researchers.

In Horizon Europe (HEU) - as of March 2023 - NTNU has 97 funded projects, of which 77 are already signed (accounting for more than € 46 million in funding), positioning NTNU among the top HEU Norwegian actors, and among the top 10 actors within the European Higher Education Sector in HEU.

Beyond its science and technology profile, NTNU covers a broad range of social science and humanities (SSH) disciplines including sociology, political science, education, psychology, economics, history, cultural sciences and the arts. Researchers from SSH disciplines have successfully addressed societal issues and contributed to social innovation through involvement in more than 30 HEU projects so far, presenting NTNU as promising and strong partner in future European collaborations in all Global Challenge clusters under Horizon Europe.

From 2014-2023, NTNU has identified several strategic research areas and enabling technologies:



NTNU BRUSSELS OFFICE



The NTNU Brussels Office represents NTNU in Brussels, provides strategic advice on European policies, promotes NTNU positions, manages or participates in strategic networks and initiatives in Brussels, and provides professional services to the NTNU community based on its Brussels presence.

The office represents both «the door to NTNU» for organizations that want to collaborate and create synergies with NTNU, and «the door to Europe» for colleagues active in or willing to enter the European Arena.

NTNU opened the doors of its Brussels Office in 2015 and today the staff consists of four people, Director Massimo Busuoli, one Senior Adviser and two trainees.

The office activities and services include the following:

- Promotion and representation of NTNU in Brussels
- Positioning of NTNU in relevant Brussels-based initiatives and bodies
- Contribution to improve NTNU's EU project portfolio
- Provide internship opportunities for NTNU employees and students
- Provision of logistic support and services in Brussels



NTNU Digital

NTNU Digital is a strategic initiative created to increase the understanding, use and development of digital technology to solve complex issues across research disciplines. The focus areas of NTNU Digital are Artificial Intelligence, Autonomous Systems, Cyber Security and Computational Technology. The core research areas can be shared across diverse applications, and the ambition is to achieve a beneficial cross-fertilization by bringing together researchers from different application areas but with commonalities in method and theory.

NTNU Digital provides the following resources across all the faculties at NTNU:

- Long-term positioning and participation in European Networks and Alliances
- Coordination, guidance and review of large, strategically important applications submitted for the European Framework Programmes and the national funding schemes
- Identification of new collaboration opportunities and overview of ongoing, relevant projects
- Internal platform to meet, obtain and share info across NTNU related to enabling digital technologies
- Promotion of NTNU research excellence and capacities within digital technologies in front of local, national, and international research and innovation arenas

NTNU Digital: Success stories

These are some examples of NTNU Digital success stories.

Conceptual architecture and coordination of the [MSCA COFUND PERSEUS](#) proposal which aims to educate top-level researchers contributing to solve societal challenges within the areas of energy, healthcare, manufacturing, mobility, and ocean-based technology, through the use of digital technologies.

Strategic guidance and review of long-term strategic and prestigious research and innovation proposals submitted for the funding to the Research Council of Norway. These projects have been awarded: [SFI Autoship](#) - Autonomous ships for safe and sustainable operations, [NorwAI](#) - Norwegian Research Centre for AI Innovation, [NORCICS](#) - Norwegian Centre for Cybersecurity in Critical Sectors and [CGF](#) - Centre for Geophysical Forecasting.



FACULTY OF INFORMATION TECHNOLOGY AND ELECTRICAL ENGINEERING

The **Faculty of Information Technology and Electrical Engineering (IE)** has more than 65 percent of the Norwegian university education and research within our disciplines. We offer bachelor, master, and PhD degrees in our areas of expertise. We have the largest number of students at Master and PhD levels in Norway within our disciplines.

The research at the Faculty of Information Technology and Electrical Engineering addresses challenges ranging from basic research in mathematics, computer science, cybernetics, nano and microelectronics, to global research demands within energy, transport, health and welfare, robust and secure ICT services, cyber security and marine and arctic operations.

The different research fields are organized along the lines of 11 strategic research areas:

- [Artificial Intelligence](#)
- [Autonomous Systems](#)
- [Cyber Security](#)
- [Small Satellite Lab](#)
- [Mathematics in Technology](#)
- [Data Science](#)
- [Internet of Things](#)
- [Energy Efficient Computing Systems](#)
- [Digital Twins](#)
- [Digital Enterprise](#)
- [Digital Electric Energy](#)

Horizon 2020

IE Faculty participation

65

RESEARCH PROJECTS

Ranging from excellence projects within basic research (ERC), doctoral and postdoctoral training (MSCA) to collaborative R&I projects with higher TRL levels together with a number of European partners within research, public sector and industry.



Faculty of Information Technology and Electrical Engineering

We have great influence on and responsibility for new information-based industrial developments and developments within other areas of society which apply information and communication technology. Both our research and education are at a high international level.

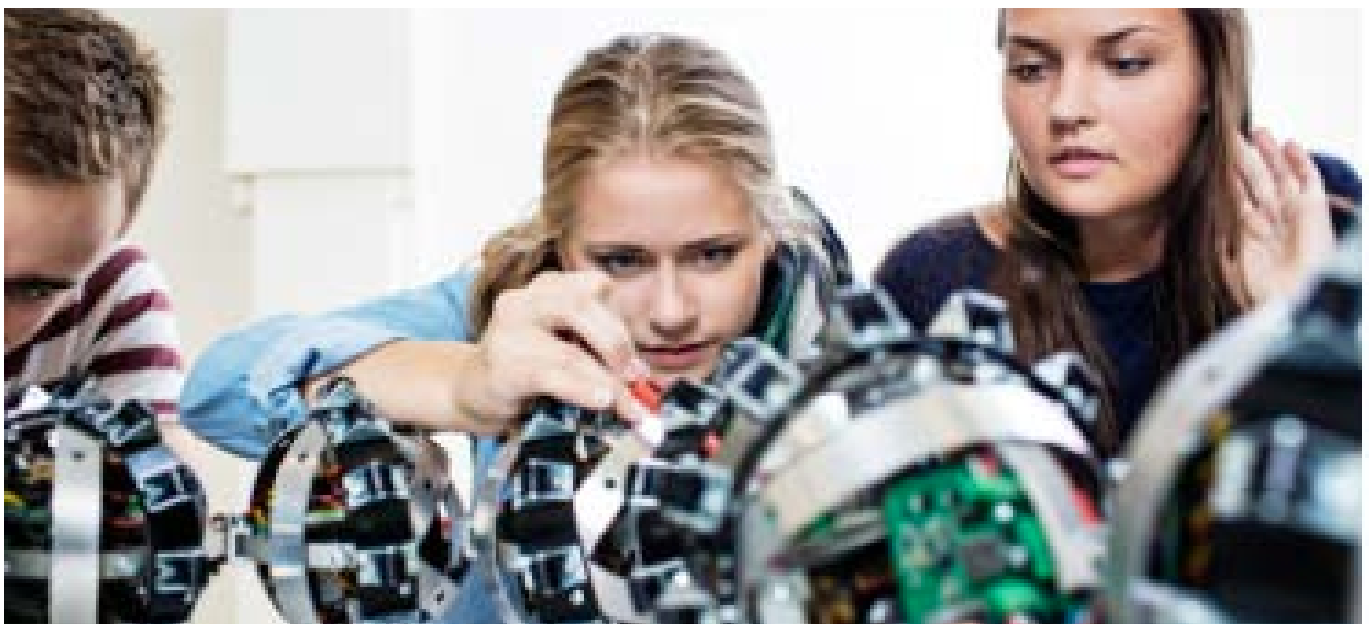
Our PhD programs are popular for national and international students, either at a program within our faculty:

- [Computer Science](#)
- [Electric Power Engineering](#)
- [Electronics and Telecommunication](#)
- [Engineering Cybernetics](#)
- [Information Security and Communication Technology](#)
- [Mathematical Sciences](#)

Or through a cross-disciplinary program such as [Medical Technology](#).

We are also partners in two National research schools:

- [Nanotechnology for Microsystems](#)
- [Computer and Information Security](#)



COLLABORATING WITH NTNU

As the largest Norwegian university with high multidisciplinary nature, NTNU offers a wide range of expertise and competences. Specific mapping of available researchers willing to collaborate on Horizon Europe have been performed for all clusters, producing documents similar to this brochure. All the brochures are available through the NTNU Brussels Office.

[Make sure you have the latest version available by downloading it from this website.](#)

Should you be interested to explore collaboration opportunities in areas not present in any of these brochures, you can get in touch with the institutional entry points of the university

ENTRY POINTS

[NTNU Brussels Office](#)

[NTNU Digital](#)

Contact person: [John Krogstie](#)

Faculty EU advisors

AD - Faculty of Architecture and Design

[Tone Woie Alstadheim](#) and [Srutarshi Pradhan](#)

HF - Faculty of Humanities

[Chamila Thushari Attanapola](#)

IE - Faculty of Information Technology and Electrical Engineering

[Nathalie Søyseth](#) and [Filip Jessen](#)

IV - Faculty of Engineering

[Ingunn Syrstad Bøgeberg](#) and [Miriam K. Khider](#)

MH - Faculty of Medicine and Health Sciences

[Emma Louise Walton](#)

NV - Faculty of Natural Sciences

[Thais Mothe-Diniz](#) and [Eugen Gravningen Sørmo](#)

SU - Faculty of Social and Educational Sciences

[Bård Li](#) and [Jens Rohloff](#)

ØK - Faculty of Economics and Management

[Thomas Aarnseth](#)

VM - NTNU University Museum – [Astrid Johansen](#)


NTNU in Gjøvik – [Anne Hilde Ruen Nymo](#)

NTNU in Ålesund – [Kirsti Brekke](#)





RESEARCHERS



Destination 1:

Climate neutral, circular and digitised production

Here you can find potential NTNU researchers that are interested in collaborations on destination 1.

The following pages are sorted into the calls for the destination presented in the work programme for cluster 4. To simplify your navigation among available expertises per topic, the list of topics have been made clickable.

DESTINATION 1 - CALLS

Click on the call to be directed to its page

Call - TWIN GREEN AND DIGITAL TRANSITION 2024.

Manufacturing Industry.

[HORIZON-CL4-2024-TWIN-TRANSITION-01-03: Manufacturing as a Service: Technologies for customised, flexible, and decentralised production on demand \(Made in Europe Partnership\) \(RIA\) 6](#)

[HORIZON-CL4-2024-TWIN-TRANSITION-01-05: Technologies/solutions to support circularity for manufacturing \(Made in Europe Partnership\) \(RIA\)](#)

Energy Intensive Process Industries.

[HORIZON-CL4-2024-TWIN-TRANSITION-01-32: Optimisation of thermal energy flows in the process industry \(Processes4Planet partnership\) \(IA\)](#)

[HORIZON-CL4-2024-TWIN-TRANSITION-01-34: Renewable hydrogen used as feedstock in innovative production routes \(Processes4Planet Partnership\) \(RIA\)](#)

[HORIZON-CL4-2024-TWIN-TRANSITION-01-35: Turning CO2 emissions from the process industry to feedstock \(Processes4Planet partnership\) \(IA\)](#)

[HORIZON-CL4-2024-TWIN-TRANSITION-01-38: Hubs for circularity for industrialised urban peripheral areas \(Processes4Planet partnership\) \(IA\)](#)

[HORIZON-CL4-2024-TWIN-TRANSITION-01-41: Breakthroughs to improve process industry resource efficiency \(Processes4Planet partnership\) \(RIA\)](#)

[HORIZON-CL4-2024-TWIN-TRANSITION-01-44: Digital transformation and ensuring a better use of industrial data, which can optimise steel supply chains \(Clean Steel Partnership\) \(IA\)](#)

[HORIZON-CL4-2024-TWIN-TRANSITION-01-46: CO2-neutral steel production with hydrogen, secondary carbon carriers and electricity OR innovative steel applications for low CO2 emissions \(Clean Steel Partnership\) \(RIA\)](#)

DESTINATION 1 - CALLS

Click on the call to be directed to its page

Call - TWIN GREEN AND DIGITAL TRANSITION 2024 TWO STAGE

Manufacturing Industry.

[HORIZON-CL4-2024-TWIN-TRANSITION-01-01: Bio-intelligent manufacturing industries \(Made in Europe Partnership\).\(RIA\)](#)

A New Way to Build, accelerating disruptive change in construction.

[HORIZON-CL4-2024-TWIN-TRANSITION-01-12: Enhanced assessment, intervention and repair of civil engineering infrastructure \(RIA\)](#)



Nuria Espallargas

Department of Mechanical and Industrial Engineering
Faculty of Engineering

Contact information

nuria.espallargas@ntnu.no
+4746917452

Relevant links outside academia

Industrial contacts in different sectors both in Norway and in Europe

Expertise

Surface chemistry and engineering, tribology and tribocorrosion, lubricants, including environmentally acceptable, nano-tribology.

Performs basic research on degradation phenomena of surfaces exposed to aggressive chemical environment.

Research focused on understanding the chemo-mechanical degradation phenomena starting on surfaces. This knowledge enables finding solutions to make more durable and performing materials, to contribute to a greener world.

Also perform research on developing new lubricant formulations for the green shift. Controlling surface chemistry is the ultimate goal of my research.

Relevant projects

Main topics of research projects:

- **Tribocorrosion** mechanisms - coatings and metals.
- **Multidegradation** - the interaction of tribocorrosion with fatigue.
- **Experimental** nano-tribology.
- **Environmentally** acceptable lubricants and water lubrication.
- **Coatings** and surface treatments for tribological contacts.
- **Synthesis** and production of ceramic based feedstock materials for thermal spraying and additive manufacturing.



Fabio Sgarbossa

Department of Mechanical and Industrial Engineering
Faculty of Engineering

Contact information

fabio.sgarbossa@ntnu.no
+4790768098

Expertise

Logistics, Operations and Supply Chain Management, Industrial and Systems Engineering, Industry 4.0 and 5.0, Circular Economy, Material Handling and Warehousing, Human-Factors and Ergonomics, Human-Centric Production and Logistics systems, Maintenance Management.

Relevant projects

EU projects:

Lean 4.0; H2GLASS; MAIA; DE2HUMAN

National projects:

Digmat; DigCBA; SmartLIB; FutureLOG



Eilif Hjelseth

Department of Civil and Environmental Engineering
Faculty of Engineering

Contact information

eilif.hjelseth@ntnu.no
+4795266100

Relevant links outside academia

Board member of
BuildingSMART Norway

Head of the digitalization
group at Prosjekt Norge

Expertise

- Digitalization of construction processes
- Building Information Modelling (BIM)
- Virtual Design and Construction (VDC)
- Development of knowledge-based expert systems
- Transformation of codes and regulations into automatic/semiautomatic validations
- Digitalization of sustainability requirements
- Change management
- Digital solutions for Project management
- Information Managements
- Standardization

Relevant projects

DigiPlace - Development of a framework for a digital European platform

Growing Circle - digital solution for increased circularity, digital passport and digital twins

Bridging the Gap - Holistic requirement for the entire lifecycle

Standardization at international (ISO), European (CEN) and national (NS) levels



Erlend Alfnes

Mechanical and Industrial Engineering
Faculty of Engineering

Contact information

erlend.alfnes@ntnu.no
+4709291145

Expertise

- Operations and Supply Chain Management
- Production Logistics
- Industry 4.0 and 5.0
- Operations Excellence
- Circular Economy
- Mass Customization
- Project Supply Chains
- Enterprise Resource Planning

Relevant projects

European projects:

- **Lean 4.0:** Lean European Action-learning Network utilizing Industry 4.0
- **EuroLean+:** European Lean Enterprise Alliance

National projects:

- **Respons:** Smart planning in supply chains for manufacturing of advanced ship equipment
- **Soundchain:** Effective supply chains for manufacturing of underwater sensor systems

HORIZON-CL4-2024-TWIN-TRANSITION-01-05: TECHNOLOGIES/SOLUTIONS TO SUPPORT CIRCULARITY FOR MANUFACTURING (MADE IN EUROPE PARTNERSHIP) (RIA)



Bjørn Andersen

Department of Mechanical and Industrial Engineering
Faculty of Engineering

Contact information

bjorn.andersen@ntnu.no
+4792602882

Relevant links outside academia

Large network through
prosjektnorge.no, industry,
public sector, etc.

Expertise

Project management,
process modelling,
performance measurement,
stakeholder management

Expertise specific to this call:

Process modelling, metrics

Relevant projects

PRIME

TARGET



Nuria Espallargas

Department of Mechanical and Industrial Engineering
Faculty of Engineering

Contact information

nuria.espallargas@ntnu.no
+4746917452

Relevant links outside academia

Industrial contacts in
different sectors both in
Norway and in Europe

Expertise

Surface chemistry and engineering, tribology
and tribocorrosion, lubricants, including
environmentally acceptable, nano-tribology.

Performs basic research on degradation
phenomena of surfaces exposed to aggressive
chemical environment.

Research focused on understanding the chemo-
mechanical degradation phenomena starting on
surfaces. This knowledge enables finding
solutions to make more durable and performing
materials, to contribute to a greener world.

Also perform research on developing new
lubricant formulations for the green shift.
Controlling surface chemistry is the ultimate
goal of my research.

Relevant projects

Main topics of research projects:

- **Tribocorrosion** mechanisms - coatings and metals.
- **Multidegradation** - the interaction of tribocorrosion with fatigue.
- **Experimental** nano-tribology.
- **Environmentally** acceptable lubricants and water lubrication.
- **Coatings** and surface treatments for tribological contacts.
- **Synthesis** and production of ceramic based feedstock materials for thermal spraying and additive manufacturing.



Fabio Sgarbossa

Department of Mechanical and Industrial Engineering
Faculty of Engineering

Contact information

fabio.sgarbossa@ntnu.no
+4790768098

Expertise

Logistics, Operations and Supply Chain Management, Industrial and Systems Engineering, Industry 4.0 and 5.0, Circular Economy, Material Handling and Warehousing, Human-Factors and Ergonomics, Human-Centric Production and Logistics systems, Maintenance Management.

Relevant projects

EU projects:

Lean 4.0; H2GLASS; MAIA; DE2HUMAN

National projects:

Digmat; DigCBA; SmartLIB; FutureLOG



Eilif Hjelseth

Department of Civil and Environmental Engineering
Faculty of Engineering

Contact information

eilif.hjelseth@ntnu.no
+4795266100

Relevant links outside academia

Board member of
BuildingSMART Norway

Head of the digitalization
group at Prosjekt Norge

Expertise

- Digitalization of construction processes
- Building Information Modelling (BIM)
- Virtual Design and Construction (VDC)
- Development of knowledge-based expert systems
- Transformation of codes and regulations into automatic/semiautomatic validations
- Digitalization of sustainability requirements
- Change management
- Digital solutions for Project management
- Information Managements
- Standardization

Relevant projects

DigiPlace - Development of a framework for a digital European platform

Growing Circle - digital solution for increased circularity, digital passport and digital twins

Bridging the Gap - Holistic requirement for the entire lifecycle

Standardization at international (ISO), European (CEN) and national (NS) levels



Elli Verhulst

Department of Industrial Economics and Technology Management
Faculty of Economics and Management

Contact information

elli.verhulst@ntnu.no
+47 73590164

Expertise

sustainable innovation and entrepreneurship,
interdisciplinary collaboration, human factors
sustainable/circular business models, integration
processes, method and tool development

Relevant projects

- Integration of sustainability in innovation processes at SMEs - different projects
- Tools and method development for sustainable innovation and entrepreneurship - different projects
- **Digifab**, supporting SMEs to move towards Industry 4.0 (NFR funding)
- Prisms Practical and Innovative Solutions for Manufacturing Sustainability (University of Cambridge, IfM ECS)
- **HolE-LIB** – Developing a Holistic Ecosystem for Sustainable Repurposing and/or Recycling of Lithium-ion Batteries (LIBs) in Norway and EU (NTNU Sustainability)
- **MINDER** - Methodologies for Improvement of Non-residential buildings' Day-to-day Energy efficiency Reliability (NFR funding)
- **SFU Engage** – Entrepreneurship education for educators (HKdir)



Kjersti Kjos Longva

Department of International Business
Faculty of Economics and Management

Contact information

kjersti.kjos.longva@ntnu.no
+47 70 16 12 94

Relevant links outside academia

Industry, cluster organizations, entrepreneurs and public sector.

Expertise

Entrepreneurship, SMEs, entrepreneurship education, innovation in education, management education, innovation skills, innovation processes, university-industry collaboration, sustainable business models.

Relevant projects

- **ERASMUS+** project BLUEWBC Sustainable development of BLUE Economics through higher education and innovation in Western Balkan Countries.
- **nnoPraksis** - Innovative internships in business education.
- **TEFT**-lab at NTNU.



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Mechanical and Industrial Engineering
Faculty of Engineering

Contact information

erlend.alfnes@ntnu.no
+4709291145

Expertise

- Operations and Supply Chain Management
- Production Logistics
- Industry 4.0 and 5.0
- Operations Excellence
- Circular Economy
- Mass Customization
- Project Supply Chains
- Enterprise Resource Planning

Relevant projects

European projects:

- **Lean 4.0:** Lean European Action-learning Network utilizing Industry 4.0
- **EuroLean+:** European Lean Enterprise Alliance

National projects:

- **Respons:** Smart planning in supply chains for manufacturing of advanced ship equipment
- **Soundchain:** Effective supply chains for manufacturing of underwater sensor systems



Morten Hovd

Department of Engineering Cybernetics

Faculty of Information Technology and Electrical Engineering

Contact information

morten.hovd@itk.ntnu.no
+47 91897189

Relevant links outside academia

Norwegian TSO and DSOs,
chemical process
industries, advanced
control suppliers (SMEs)

Expertise

Control engineering applied to
the smart grid and/or chemical
process industries

Relevant projects

MSCA ITN TEMPO

National Norwegian research projects

HORIZON-CL4-2024-TWIN-TRANSITION-01-34: RENEWABLE HYDROGEN USED AS FEEDSTOCK IN INNOVATIVE PRODUCTION ROUTES (PROCESSES4PLANET PARTNERSHIP) (RIA)



Fabio Sgarbossa

Department of Mechanical and Industrial Engineering
Faculty of Engineering

Contact information

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+4790768098

Expertise

Logistics, Operations and Supply Chain Management, Industrial and Systems Engineering, Industry 4.0 and 5.0, Circular Economy, Material Handling and Warehousing, Human-Factors and Ergonomics, Human-Centric Production and Logistics systems, Maintenance Management.

Relevant projects

EU projects:

Lean 4.0; H2GLASS; MAIA; DE2HUMAN

National projects:

Digimat; DigCBA; SmartLIB; FutureLOG



Arvind Sharma

Department of Information Security and Communication
Technology
Faculty of Information Technology and Electrical Engineering

Contact information

arvind.sharma@ntnu.no
+47 46710948

Relevant links outside academia

Security Industries and
research institutions

Expertise

IoT, Embedded System, Hardware Security, Supply chain, Cyber security, Digital Twin

Expertise specific to this call:

Technology assessment, testing, product development, techno-economic study

Relevant projects

Norwegian centre of Cyber Security for Critical infrastructure (NORCICS)



Morten Hovd

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Faculty of Information Technology and Electrical Engineering

Contact information

morten.hovd@itk.ntnu.no
+47 91897189

Relevant links outside academia

Norwegian TSO and DSOs,
chemical process
industries, advanced
control suppliers (SMEs)

Expertise

Control engineering applied to
the smart grid and/or chemical
process industries

Relevant projects

MSCA ITN TEMPO

National Norwegian research projects

HORIZON-CL4-2024-TWIN-TRANSITION-01-38: HUBS FOR CIRCULARITY FOR INDUSTRIALISED URBAN PERIPHERAL AREAS (PROCESSES4PLANET PARTNERSHIP) (IA)



Bjørn Andersen

Department of Mechanical and Industrial Engineering
Faculty of Engineering

Contact information

bjorn.andersen@ntnu.no
+4792602882

Relevant links outside academia

Large network through prosjektnorge.no, industry, public sector, etc.

Expertise

Project management,
process modelling,
performance measurement,
stakeholder management

Expertise specific to this call:

Participant in pilot project to map building for demolition for reuse

Relevant projects

PRIME

TARGET



Govert Valkenburg

Department of Interdisciplinary Studies of Culture
Faculty of Humanities

Contact information

govert.valkenburg@ntnu.no
+47 94896748

Expertise

Interpretive social-scientific expertise. **Social scientist** with additional backgrounds in engineering and classical music, well-versed in processes of knowledge production, knowledge exchange, and the use of knowledge for democratic and managerial processes.

Has contracted important expertise in connecting high-tech research and development with traditional and indigenous knowledges, and with cultural categories, moral and ethical frameworks, and public and political debate.

These connections have been made across such diverse fields as energy and sustainability transitions, medical research, infrastructures, and digital technologies in relation to privacy and security.

Relevant projects

My research experience of 20 years has been entirely project-based.

European projects have included:

PRISMS (privacy and security),

MILESECURE2050 (low-carbon transitions and energy security).



Morten Hovd

Department of Engineering Cybernetics
Faculty of Information Technology and Electrical Engineering

Contact information

morten.hovd@itk.ntnu.no
+47 91897189

Relevant links outside academia

Norwegian TSO and DSOs,
chemical process
industries, advanced
control suppliers (SMEs)

Expertise

Control engineering applied to
the smart grid and/or chemical
process industries

Relevant projects

MSCA ITN TEMPO

National Norwegian research projects

HORIZON-CL4-2024-TWIN-TRANSITION-01-44: DIGITAL TRANSFORMATION AND ENSURING A BETTER USE OF INDUSTRIAL DATA, WHICH CAN OPTIMISE STEEL SUPPLY CHAINS (CLEAN STEEL PARTNERSHIP) (IA)



Fabio Sgarbossa

Department of Mechanical and Industrial Engineering
Faculty of Engineering

Contact information

fabio.sgarbossa@ntnu.no
+4790768098

Expertise

Logistics, Operations and Supply Chain Management, Industrial and Systems Engineering, Industry 4.0 and 5.0, Circular Economy, Material Handling and Warehousing, Human-Factors and Ergonomics, Human-Centric Production and Logistics systems, Maintenance Management.

Relevant projects

EU projects:

Lean 4.0; H2GLASS; MAIA; DE2HUMAN

National projects:

Digmat; DigCBA; SmartLIB; FutureLOG



Leonardo Montecchi

Department of Computer Science
Faculty of Engineering

Contact information

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+47 4628 6498

Relevant links outside academia

ResilTech s.r.l. (Italy):

Instituto Nacional de
Pesquisas Espaciais, Brazil
(National Space Research
Institute of Brazil)

Expertise

Expertise in different kind of modeling techniques for the specification and verification of non-functional properties of complex systems.

System-level Verification & Validation, Model-Based Systems Engineering, Model-Driven Engineering, Reliability Evaluation, RAMS, Stochastic Petri Nets.

Relevant projects

ADVANCE (MSCA-RISE-2018-823788),

CONCERTO (ARTEMIS-2012-1-333053),

CHESS (ARTEMIS-2008-1-100022)



Arvind Sharma

**Department of Information Security and Communication
Technology**
Faculty of Information Technology and Electrical Engineering

Contact information

arvind.sharma@ntnu.no
+47 46710948

Relevant links outside academia

Security Industries and
research institutions

Expertise

IoT, Embedded System, Hardware
Security, Supply chain, Cyber security,
Digital Twin

Expertise specific to this call:

Technology assessment, testing,
product development, techno-
economic study

Relevant projects

Norwegian centre of Cyber
Security for Critical
infrastructures (**NORCICS**)



Fabio Sgarbossa

Department of Mechanical and Industrial Engineering
Faculty of Engineering

Contact information

fabio.sgarbossa@ntnu.no
+4790768098

Expertise

Logistics, Operations and Supply Chain Management, Industrial and Systems Engineering, Industry 4.0 and 5.0, Circular Economy, Material Handling and Warehousing, Human-Factors and Ergonomics, Human-Centric Production and Logistics systems, Maintenance Management.

Relevant projects

EU projects:

Lean 4.0; H2GLASS; MAIA; DE2HUMAN

National projects:

Digmat; DigCBA; SmartLIB; FutureLOG



Morten Hovd

Department of Engineering Cybernetics
Faculty of Information Technology and Electrical Engineering

Contact information

morten.hovd@itk.ntnu.no
+47 91897189

Expertise

Control engineering applied to the smart grid and/or chemical process industries

Relevant projects

MSCA ITN TEMPO

National Norwegian research projects

Relevant links

outside academia

Norwegian TSO and DSOs, chemical process industries, advanced control suppliers (SMEs)



Fabio Sgarbossa

Department of Mechanical and Industrial Engineering
Faculty of Engineering

Contact information

fabio.sgarbossa@ntnu.no
+4790768098

Expertise

Logistics, Operations and Supply Chain Management, Industrial and Systems Engineering, Industry 4.0 and 5.0, Circular Economy, Material Handling and Warehousing, Human-Factors and Ergonomics, Human-Centric Production and Logistics systems, Maintenance Management.

Relevant projects

EU projects:

Lean 4.0; H2GLASS; MAIA; DE2HUMAN

National projects:

Digmat; DigCBA; SmartLIB; FutureLOG



Ilangko Balasingham

Department of Eletronic Systems
Faculty of Information Technology and Electrical Engineering

Contact information

ilangko.balasingham@ntnu.no
+ 4793459022

Relevant links outside academia

Industry (medtech)

Expertise

- Microscale antennas and wireless communication systems
- Passive (battery-free) wireless communication methods
- Passive microimplants for actuation, sensing and communication
- Medical signal and image processing using machine learning algorithms
- Molecular communication technology (nanoscale communication modeling and data inference)

Relevant projects

1. Principle Investigator/Work Package Leader of Wireless Brain-Connect Interface to Machines (B-CRATOS), (Funded by the European Commission (EC) H2020:Future Emerging Technologies (FET) Open Program, 01.03.2021- 28.02.2025, award EUR 4.475 million)

2. Principle Investigator/Work Package Leader of Reliable Technologies and Models for Verified Wireless Body-Centric Transmission and Localization (ROVER) , (Funded by the EC H2020-MSCA-RISE, 01.01.2020-31.12.2023, award EUR 1 million)

3. Principle Investigator of 5G HHealth AquacultuRe and Transport validation trials (5G-HEART), (Funded by the EC H2020:ICT, 01.07.2019-30.06.2022, award EUR 14.3 million)

4. Principle Investigator of Next-Generation Theranostics of Brain Pathologies With Autonomous Externally Controllable Nanonetworks: A Transdisciplinary Approach With Bio-Nanodevices Interfaces (GLADIATOR), (Funded by the EC H2020: FET Open Program, 01.01.2019-31.12.2022, award EUR 5.9 million)

5. Coordinator/Principle Investigator of Wireless In-Body Environment (WiBEC), (Funded by the EC, H2020- MARIE Skodowska-CURIE ACTIONS (MSCA-ITN-2015), 01.01.2016-31.12.2019, award EUR 3.957 million)

6. Work Package Leader of ULTRASPONDER, (Funded by the European Union 7th Framework Program, STREP, 01.09.2008 -31.08.2011, award EUR 4.5 million)



Andreas Erbe

Department of Materials Science and Engineering
Faculty of Natural Science

Contact information

andreas.erbe@ntnu.no
+47 73594048

Relevant links outside academia

Many industry partners (metal-producing industries in Norway and other parts of Europe; surface pretreatment producing industries); Public sectors (e.g., local museums).

Expertise

- Materials degradation (corrosion) on a molecular, mesoscopic to macroscopic level
- Materials interaction with environment (incl. complex biological environments in the body)
- Vibrational spectroscopy (IR, Raman) in complex matrices, especially for materials surface analysis, study of solvation, and in combination with electrochemical techniques
- Surface treatment of metals and semiconductors (pretreatment, etching, etc.) incl. recycled aluminium
- Electrochemical techniques
- Data analysis and machine learning techniques in relation to the above

Relevant projects

Many fundamental and applied research projects, most of them via national funding initiative, but also including MSCA-ITN



Bjørn Andersen

Department of Mechanical and Industrial Engineering
Faculty of Engineering

Contact information

bjorn.andersen@ntnu.no
+4792602882

Relevant links outside academia

Large network through
prosjektnorge.no, industry,
public sector, etc.

Expertise

Project management,
process modelling,
performance measurement,
stakeholder management

Expertise specific to this call:

Metrics to predict needs for
interventions

Relevant projects

PRIME

TARGET



Nuria Espallargas

Department of Mechanical and Industrial Engineering
Faculty of Engineering

Contact information

nuria.espallargas@ntnu.no
+4746917452

Relevant links outside academia

Industrial contacts in
different sectors both in
Norway and in Europe

Expertise

Surface chemistry and engineering, tribology
and tribocorrosion, lubricants, including
environmentally acceptable, nano-tribology.

Performs basic research on degradation
phenomena of surfaces exposed to aggressive
chemical environment.

Research focused on understanding the chemo-
mechanical degradation phenomena starting on
surfaces. This knowledge enables finding
solutions to make more durable and performing
materials, to contribute to a greener world.

Also perform research on developing new
lubricant formulations for the green shift.
Controlling surface chemistry is the ultimate
goal of my research.

Relevant projects

Main topics of research projects:

- **Tribocorrosion** mechanisms - coatings and metals.
- **Multidegradation** - the interaction of tribocorrosion with fatigue.
- **Experimental** nano-tribology.
- **Environmentally** acceptable lubricants and water lubrication.
- **Coatings** and surface treatments for tribological contacts.
- **Synthesis** and production of ceramic based feedstock materials for thermal spraying and additive manufacturing.



Govert Valkenburg

Department of Interdisciplinary Studies of Culture
Faculty of Humanities

Contact information

govert.valkenburg@ntnu.no
+47 94896748

Expertise

Interpretive social-scientific expertise. **Social scientist** with additional backgrounds in engineering and classical music, well-versed in processes of knowledge production, knowledge exchange, and the use of knowledge for democratic and managerial processes.

Has contracted important expertise in connecting high-tech research and development with traditional and indigenous knowledges, and with cultural categories, moral and ethical frameworks, and public and political debate.

These connections have been made across such diverse fields as energy and sustainability transitions, medical research, infrastructures, and digital technologies in relation to privacy and security.

Relevant projects

My research experience of 20 years has been entirely project-based.

European projects have included:

PRISMS (privacy and security),

MILESECURE2050 (low-carbon transitions and energy security).



Leonardo Montecchi

Department of Computer Science
Faculty of Engineering

Contact information

leonardo.montecchi@ntnu.no
+47 4628 6498

Relevant links outside academia

ResilTech s.r.l. (Italy):

Instituto Nacional de Pesquisas Espaciais, Brazil
(National Space Research Institute of Brazil)

Expertise

Expertise in different kind of modeling techniques for the specification and verification of non-functional properties of complex systems.

System-level Verification & Validation, Model-Based Systems Engineering, Model-Driven Engineering, Reliability Evaluation, RAMS, Stochastic Petri Nets.

Relevant projects

ADVANCE (MSCA-RISE-2018-823788),

CONCERTO (ARTEMIS-2012-1-333053),

CHESS (ARTEMIS-2008-1-100022)



Quoc Anh Tran

Department of Civil and Environmental Engineering
Faculty of Engineering

Contact information

quoc.a.tran@ntnu.no
+47 41356941

Expertise

Computational modeling of landslide/ submarine landslides



ASSOCIATED PROFESSORS

Destination 2:

Increased autonomy in key strategic value chains for resilient industry

Here you can find potential NTNU researchers that are interested in collaborations on destination 2.

The following pages are sorted into the calls for the destination presented in the draft for cluster 4. To simplify your navigation among available expertises per topic, the list of topics have been made clickable.

DESTINATION 2 - CALLS

Click on the call to be directed to its page

Call - RESILIENT VALUE CHAINS 2024 TWO STAGE

Strategic innovation markets driven by advanced materials.

[HORIZON-CL4-2024-RESILIENCE-01-35: Biodegradable polymers for sustainable packaging materials \(IA\)](#)

[HORIZON-CL4-2024-RESILIENCE-01-36: Advanced biomaterials for the Health Care \(IA\)](#)

Improving the resilience of EU businesses, especially SMEs and Startups.

Call - RESILIENT VALUE CHAINS 2024.

Raw Materials for EU open strategic autonomy and successful transition to a climate-neutral and circular economy.

[HORIZON-CL4-2024-RESILIENCE-01-01: Exploration of critical raw materials in deep land deposits \(RIA\)](#)

[HORIZON-CL4-2024-RESILIENCE-01-04: Technologies for processing and refining of critical raw materials \(IA\)](#)

[HORIZON-CL4-2024-RESILIENCE-01-08: Rare Earth and magnets innovation hubs \(IA\)](#)

[HORIZON-CL4-2024-RESILIENCE-01-10: Addressing due diligence requirements in raw materials supply chains. \(CSA\)](#)

[HORIZON-CL4-2024-RESILIENCE-01-11: Technologies for extraction and processing of critical raw materials \(IA\)](#)

Safe and Sustainable by Design (SSbD) Chemicals and Materials.

[HORIZON-CL4-2024-RESILIENCE-01-24: Development of safe and sustainable by design alternatives \(IA\)](#)

Improving the resilience of EU businesses, especially SMEs and Startups.

[HORIZON-CL4-2024-RESILIENCE-01-41: 'Innovate to transform' support for SME's sustainability transition \(CSA\)](#)

HORIZON-CL4-2024-RESILIENCE-01-01: Exploration of critical raw materials in deep land deposits (RIA)



Steinar Løve Ellefmo

Department of Geosciences and Petroleum
Faculty of Engineering

Contact information

steinar.ellefmo@ntnu.no
+47 905 07 125

Expertise

Mineral resource management including geostatistics, 3D geology modelling and mine planning and -design as well as mine evaluation and open pit optimization. Working both with mineral resources on the deep ocean floor and onshore.

Relevant projects

- **Blue Mining and MarMine** focusing on technologies for extraction and the sampling and characterization of marine mineral deposits on the deep ocean floor.
- **InRec** that worked on the implementation of the geometallurgical approach developed primarily for metalliferous deposits in the industrial mineral's sector.
- **MAP-project** that worked on the development of methodologies and software for mineral resource assessments.



Kurt Aasly

Department of Geoscience and Petroleum
Faculty of Engineering

Contact information

kurt.aasly@ntnu.no
+4793443511

Expertise

- Mineral resources, process mineralogy, mineral characterization, geometallurgy.
- Have been working with industrial minerals (e.g. quartz, carbonates, nepheline syenites), and metallic ores (e.g. sulphide ores, iron- and ilmenite ores, REEs).
- I have also been involved in deep sea mining.

Relevant projects

- MarMine- and Blue Nodules project - both related to characterization of deposits on the ocean floor.
- InRec - developing the geometallurgical approach for the industrial sector.
- Pyrrhotite in concrete aggregates - characterization of concrete aggregates with respect to the occurrence of pyrrhotite in the aggregates.
- Projects related to secondary resources from waste rocks and tailings.



Morten Hovd

Department of Engineering Cybernetics
Faculty of Information Technology and Electrical Engineering

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+47 91897189

Relevant links outside academia

Norwegian TSO and DSOs,
chemical process
industries, advanced
control suppliers (SMEs)

Expertise

Control engineering applied to
the smart grid and/or chemical
process industries

Relevant projects

MSCA ITN TEMPO

National Norwegian research projects

Rolf Arne Kleiv

Department of Geoscience and Petroleum
Faculty of Engineering

Contact information

rolf.kleiv@ntnu.no

Expertise

- Mineral processing.
- Comminution, classification and mineral separation.
- Mechanical activation and fine grinding. Product development and waste valorisation.
- Environmental aspects of mineral production.

Relevant projects

- Ultra fine grinding. Production of nano-sized silicon for battery applications.
- Waste valorisation. Development of metal adsorbents from tailings materials.
- Carbon sequestration. Sequestration through mechanical activation and mineral-gas reactions.
- Selective fragmentation. High Pressure Grinding Rolls and High Voltage Pulse Fragmentation.
- Various projects on comminution and mineral separation.



Steinar Løve Ellefmo

Department of Geosciences and Petroleum
Faculty of Engineering

Contact information

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+47 905 07 125

Expertise

Mineral resource management including geostatistics, 3D geology modelling and mine planning and -design as well as mine evaluation and open pit optimization. Working both with mineral resources on the deep ocean floor and onshore.

Relevant projects

- **Blue Mining and MarMine** focusing on technologies for extraction and the sampling and characterization of marine mineral deposits on the deep ocean floor.
- **InRec** that worked on the implementation of the geometallurgical approach developed primarily for metalliferous deposits in the industrial mineral's sector.
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Expertise

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Relevant projects

- MarMine- and Blue Nodules project - both related to characterization of deposits on the ocean floor.
- InRec - developing the geometallurgical approach for the industrial sector.
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- Projects related to secondary resources from waste rocks and tailings.



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Relevant projects

- MarMine- and Blue Nodules project - both related to characterization of deposits on the ocean floor.
- InRec - developing the geometallurgical approach for the industrial sector.
- Pyrrhotite in concrete aggregates - characterization of concrete aggregates with respect to the occurrence of pyrrhotite in the aggregates.
- Projects related to secondary resources from waste rocks and tailings.

HORIZON-CL4-2024-RESILIENCE-01-11: Technologies for extraction and processing of critical raw materials (IA)



Hakan Basarir

Department of Geosciences and Petroleum
Faculty of Engineering

Contact information

hakan.basarir@ntnu.no
+4741292371

Relevant links outside academia

Some companies
producing critical
raw materials

Expertise

Mining engineering,
Rock mechanics, Modelling,
Optimization, the use of soft
computing methods in mining
engineering

Expertise specific to this call:

Expertise in mineral extraction
and modelling & optimization

Relevant projects

Artificial intelligence (AI) based rock
property modelling and blast design
optimisation

Battery Materials for a Circular Economy:
Advancing Certification and Improving
Life-Cycle Impacts for Market Advantage



Morten Hovd

Department of Engineering Cybernetics
Faculty of Information Technology and Electrical Engineering

Contact information

morten.hovd@itk.ntnu.no
+47 91897189

Relevant links outside academia

Norwegian TSO and DSOs,
chemical process
industries, advanced
control suppliers (SMEs)

Expertise

Control engineering applied to
the smart grid and/or chemical
process industries

Relevant projects

MSCA ITN TEMPO

National Norwegian research projects

Rolf Arne Kleiv

Department of Geoscience and Petroleum
Faculty of Engineering

Contact information

rolf.kleiv@ntnu.no

Expertise

- Mineral processing.
- Comminution, classification and mineral separation.
- Mechanical activation and fine grinding. Product development and waste valorisation.
- Environmental aspects of mineral production.

Relevant projects

- Ultra fine grinding. Production of nano-sized silicon for battery applications.
- Waste valorisation. Development of metal adsorbents from tailings materials.
- Carbon sequestration. Sequestration through mechanical activation and mineral-gas reactions.
- Selective fragmentation. High Pressure Grinding Rolls and High Voltage Pulse Fragmentation.
- Various projects on comminution and mineral separation.



Steinar Løve Ellefmo

Department of Geosciences and Petroleum
Faculty of Engineering

Contact information

steinar.ellefmo@ntnu.no
+47 905 07 125

Expertise

Mineral resource management including geostatistics, 3D geology modelling and mine planning and -design as well as mine evaluation and open pit optimization. Working both with mineral resources on the deep ocean floor and onshore.

Relevant projects

- **Blue Mining and MarMine** focusing on technologies for extraction and the sampling and characterization of marine mineral deposits on the deep ocean floor.
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Kurt Aasly

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Faculty of Engineering

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+4793443511

Expertise

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- Have been working with industrial minerals (e.g. quartz, carbonates, nepheline syenites), and metallic ores (e.g. sulphide ores, iron- and ilmenite ores, REEs).
- I have also been involved in deep sea mining.

Relevant projects

- MarMine- and Blue Nodules project - both related to characterization of deposits on the ocean floor.
- InRec - developing the geometallurgical approach for the industrial sector.
- Pyrrhotite in concrete aggregates - characterization of concrete aggregates with respect to the occurrence of pyrrhotite in the aggregates.
- Projects related to secondary resources from waste rocks and tailings.



Andreas Erbe

Department of Materials Science and Engineering
Faculty of Natural Science

Contact information

andreas.erbe@ntnu.no
+47 73594048

Relevant links outside academia

Many industry partners (metal-producing industries in Norway and other parts of Europe; surface pretreatment producing industries); Public sectors (e.g., local museums).

Expertise

- Materials degradation (corrosion) on a molecular, mesoscopic to macroscopic level
- Materials interaction with environment (incl. complex biological environments in the body)
- Vibrational spectroscopy (IR, Raman) in complex matrices, especially for materials surface analysis, study of solvation, and in combination with electrochemical techniques
- Surface treatment of metals and semiconductors (pretreatment, etching, etc.) incl. recycled aluminium
- Electrochemical techniques
- Data analysis and machine learning techniques in relation to the above

Relevant projects

Many fundamental and applied research projects, most of them via national funding initiative, but also including MSCA-ITN



Fabio Sgarbossa

Department of Mechanical and Industrial Engineering
Faculty of Engineering

Contact information

fabio.sgarbossa@ntnu.no
+4790768098

Expertise

Logistics, Operations and Supply Chain Management, Industrial and Systems Engineering, Industry 4.0 and 5.0, Circular Economy, Material Handling and Warehousing, Human-Factors and Ergonomics, Human-Centric Production and Logistics systems, Maintenance Management.

Relevant projects

EU projects:

Lean 4.0; H2GLASS; MAIA; DE2HUMAN

National projects:

Digmat; DigCBA; SmartLIB; FutureLOG



Govert Valkenburg

Department of Interdisciplinary Studies of Culture
Faculty of Humanities

Contact information

govert.valkenburg@ntnu.no
+47 94896748

Expertise

Interpretive social-scientific expertise. **Social scientist** with additional backgrounds in engineering and classical music, well-versed in processes of knowledge production, knowledge exchange, and the use of knowledge for democratic and managerial processes.

Has contracted important expertise in connecting high-tech research and development with traditional and indigenous knowledges, and with cultural categories, moral and ethical frameworks, and public and political debate.

These connections have been made across such diverse fields as energy and sustainability transitions, medical research, infrastructures, and digital technologies in relation to privacy and security.

Relevant projects

My research experience of 20 years has been entirely project-based.

European projects have included:

PRISMS (privacy and security),

MILESECURE2050 (low-carbon transitions and energy security).



Astrid S. de Wijn

Department of Mechanical and Industrial Engineering
Faculty of Engineering

Contact information

astrid.dewijn@ntnu.no

Expertise

Theory and modelling - tribology, surface science, transport properties, nonlinear dynamics, condensed matter

We develop models for transport of matter, energy, and momentum, and relate it to microscopic nonlinear dynamics. We currently focus on two types of systems:

- 1) molecules and nanoscale objects, especially in the context of friction, and
- 2) gases and liquids of various levels of complexity.

We employ computational (Molecular Dynamics and Monte-Carlo) as well as analytical methods to solve applied and fundamental problems. We collaborate with experimental as well as theoretical researchers from a wide variety of fields, ranging from chemical engineering to mathematical physics. The materials we study the most at the moment are electrolytes, polymers, and 2d materials.

HORIZON-CL4-2024-RESILIENCE-01-35: Biodegradable polymers for sustainable packaging materials (IA)



Andreas Erbe

Department of Materials Science and Engineering
Faculty of Natural Science

Contact information

andreas.erbe@ntnu.no
+47 73594048

Relevant links outside academia

Many industry partners (metal-producing industries in Norway and other parts of Europe; surface pretreatment producing industries); Public sectors (e.g., local museums).

Expertise

- Materials degradation (corrosion) on a molecular, mesoscopic to macroscopic level
- Materials interaction with environment (incl. complex biological environments in the body)
- Vibrational spectroscopy (IR, Raman) in complex matrices, especially for materials surface analysis, study of solvation, and in combination with electrochemical techniques
- Surface treatment of metals and semiconductors (pretreatment, etching, etc.) incl. recycled aluminium
- Electrochemical techniques
- Data analysis and machine learning techniques in relation to the above

Relevant projects

Many fundamental and applied research projects, most of them via national funding initiative, but also including MSCA-ITN



Astrid S. de Wijn

Department of Mechanical and Industrial Engineering
Faculty of Engineering

Contact information

astrid.dewijn@ntnu.no

Expertise

Theory and modelling - tribology, surface science, transport properties, nonlinear dynamics, condensed matter

We develop models for transport of matter, energy, and momentum, and relate it to microscopic nonlinear dynamics. We currently focus on two types of systems:

- 1) molecules and nanoscale objects, especially in the context of friction, and
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Nuria Espallargas

Department of Mechanical and Industrial Engineering
Faculty of Engineering

Contact information

nuria.espallargas@ntnu.no
+4746917452

Relevant links outside academia

Industrial contacts in
different sectors both in
Norway and in Europe

Expertise

Surface chemistry and engineering, tribology
and tribocorrosion, lubricants, including
environmentally acceptable, nano-tribology.

Performs basic research on degradation
phenomena of surfaces exposed to aggressive
chemical environment.

Research focused on understanding the chemo-
mechanical degradation phenomena starting on
surfaces. This knowledge enables finding
solutions to make more durable and performing
materials, to contribute to a greener world.

Also perform research on developing new
lubricant formulations for the green shift.
Controlling surface chemistry is the ultimate
goal of my research.

Relevant projects

Main topics of research projects:

- **Tribocorrosion** mechanisms -
coatings and metals.
- **Multidegradation** - the interaction
of tribocorrosion with fatigue.
- **Experimental** nano-tribology.
- **Environmentally** acceptable
lubricants and water lubrication.
- **Coatings** and surface treatments
for tribological contacts.
- **Synthesis** and production of
ceramic based feedstock materials
for thermal spraying and additive
manufacturing.



Andreas Erbe

Department of Materials Science and Engineering
Faculty of Natural Science

Contact information

andreas.erbe@ntnu.no
+47 73594048

Relevant links outside academia

Many industry partners
(metal-producing industries in
Norway and other parts of
Europe; surface pretreatment
producing industries); Public
sectors (e.g., local museums).

Expertise

- Materials degradation (corrosion) on a
molecular, mesoscopic to macroscopic level
- Materials interaction with environment (incl.
complex biological environments in the body)
- Vibrational spectroscopy (IR, Raman) in
complex matrices, especially for materials
surface analysis, study of solvation, and in
combination with electrochemical techniques
- Surface treatment of metals and
semiconductors (pretreatment, etching, etc.)
incl. recycled aluminium
- Electrochemical techniques
- Data analysis and machine learning techniques
in relation to the above

Relevant projects

Many fundamental and
applied research projects,
most of them via national
funding initiative, but also
including MSCA-ITN

HORIZON-CL4-2024-RESILIENCE-01-41: 'Innovate to transform' support for SME's sustainability transition (CSA)



Fabio Sgarbossa

Department of Mechanical and Industrial Engineering
Faculty of Engineering

Contact information

fabio.sgarbossa@ntnu.no
+4790768098

Expertise

Logistics, Operations and Supply Chain Management, Industrial and Systems Engineering, Industry 4.0 and 5.0, Circular Economy, Material Handling and Warehousing, Human-Factors and Ergonomics, Human-Centric Production and Logistics systems, Maintenance Management.

Relevant projects

EU projects:

Lean 4.0; H2GLASS; MAIA; DE2HUMAN

National projects:

Digmat; DigCBA; SmartLIB; FutureLOG



Kjersti Kjos Longva

Department of International Business
Faculty of Economics and Management

Contact information

kjersti.kjos.longva@ntnu.no
+47 70 16 12 94

Relevant links outside academia

Industry, cluster organizations, entrepreneurs and public sector.

Expertise

Entrepreneurship, SMEs, entrepreneurship education, innovation in education, management education, innovation skills, innovation processes, university-industry collaboration, sustainable business models.

Relevant projects

ERASMUS+ project BLUEWBC Sustainable development of BLUE Economics through higher education and innovation in Western Balkan Countries.

InnoPraxis - Innovative internships in business education.

TEFT-lab at NTNU.



Eilif Hjelseth

Department of Civil and Environmental Engineering
Faculty of Engineering

Contact information

eilif.hjelseth@ntnu.no
+4795266100

Relevant links outside academia

Board member of
BuildingSMART Norway

Head of the digitalization
group at Prosjekt Norge

Expertise

- Digitalization of construction processes
- Building Information Modelling (BIM)
- Virtual Design and Construction (VDC)
- Development of knowledge-based expert systems
- Transformation of codes and regulations into automatic/semiautomatic validations
- Digitalization of sustainability requirements
- Change management
- Digital solutions for Project management
- Information Managements
- Standardization

Relevant projects

DigiPlace - Development of a framework for a digital European platform

Growing Circle - digital solution for increased circularity, digital passport and digital twins

Bridging the Gap - Holistic requirement for the entire lifecycle

Standardization at international (ISO), European (CEN) and national (NS) levels



Elli Verhulst

Department of Industrial Economics and Technology Management
Faculty of Economics and Management

Contact information

elli.verhulst@ntnu.no
+47 73590164

Relevant projects

- Integration of sustainability in innovation processes at SMEs - different projects
- Tools and method development for sustainable innovation and entrepreneurship - different projects
- **Digifab**, supporting SMEs to move towards Industry 4.0 (NFR funding)
- Prisms Practical and Innovative Solutions for Manufacturing Sustainability (University of Cambridge, IfM ECS)

Expertise

Sustainable innovation and entrepreneurship, interdisciplinary collaboration, human factors sustainable/circular business models, integration processes, method and tool development

- HoE-LIB – Developing a Holistic Ecosystem for Sustainable Repurposing and/or Recycling of Lithium-ion Batteries (LIBs) in Norway and EU (NTNU Sustainability)
- MINDER - Methodologies for Improvement of Non-residential buildings' Day-to-day Energy efficiency Reliability (NFR funding)
- SFU Engage – Entrepreneurship education for educators (HKdir)



Erlend Alfnes

Mechanical and Industrial Engineering
Faculty of Engineering

Contact information

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+4709291145

Expertise

- Operations and Supply Chain Management
- Production Logistics
- Industry 4.0 and 5.0
- Operations Excellence
- Circular Economy
- Mass Customization
- Project Supply Chains
- Enterprise Resource Planning

Relevant projects

European projects:

- **Lean 4.0:** Lean European Action-learning Network utilizing Industry 4.0
- **EuroLean+:** European Lean Enterprise Alliance

National projects:

- **Respons:** Smart planning in supply chains for manufacturing of advanced ship equipment
- **Soundchain:** Effective supply chains for manufacturing of underwater sensor systems



ASSOCIATED PROFESSORS

Destination 3:

World leading data and computing technologies

Here you can find potential NTNU researchers that are interested in collaborations on destination 3.

The following pages are sorted into the calls for the destination presented in the draft for cluster 4. To simplify your navigation among available expertises per topic, the list of topics have been made clickable.

DESTINATION 3 - CALLS

Click on the call to be directed to its page

Call - World leading data and computing technologies.

Data sharing and analytics capacity.

[HORIZON-CL4-2024-DATA-01-01: AI-driven data operations and compliance technologies \(AI, data and robotics partnership\)\(IA\)](#)

From Cloud to Edge to IoT for European Data.

[HORIZON-CL4-2024-DATA-01-03: Piloting emerging Smart IoT Platforms and decentralized intelligence \(IA\)](#)

[HORIZON-CL4-2024-DATA-01-05: Platform Building, standardisation and Up-scaling of the 'Cloud-Edge-IoT' Solutions \(Horizontal Activities - CSA\)](#)



Eleftherios Papachristou

Department of Design
Faculty of Architecture and Design

Contact information

eleftherios.papachristos@ntnu.no
+47 47707238

Expertise

- Human-Centred Artificial Intelligence design
- Human-Computer Interaction
- Interaction design
- Conversational Interfaces,
- Value-centered AI
- Ethics/trust/transparency and AI
- Interface Evaluation.

Relevant projects

rurALLURE (EU H2020 CSA)

INTER-SOCIAL (EU INTERREG)

SERIES (EU FP7 CSA)

QALIBRA (EU FP6 CSA)



Ilangko Balasingham

Department of Eletronic Systems
Faculty of Information Technology and Electrical Engineering

Contact information

ilangko.balasingham@ntnu.no
+ 4793459022

Relevant links outside academia

Industry (medtech)

Expertise

- Microscale antennas and wireless communication systems
- Passive (battery-free) wireless communication methods
- Passive microimplants for actuation, sensing and communication
- Medical signal and image processing using machine learning algorithms
- Molecular communication technology (nanoscale communication modeling and data inference)

Relevant projects

1. Principle Investigator/Work Package Leader of Wireless Brain-Connect Interface to Machines (B-CRATOS), (Funded by the European Commission (EC) H2020:Future Emerging Technologies (FET) Open Program, 01.03.2021- 28.02.2025, award EUR 4.475 million)

2. Principle Investigator/Work Package Leader of Reliable Technologies and Models for Verified Wireless Body-Centric Transmission and Localization (ROVER) , (Funded by the EC H2020-MSCA-RISE, 01.01.2020-31.12.2023, award EUR 1 million)

3. Principle Investigator of 5G Health AquacultuRe and Transport validation trials (5G-HEART), (Funded by the EC H2020:ICT, 01.07.2019-30.06.2022, award EUR 14.3 million)

4. Principle Investigator of Next-Generation Theranostics of Brain Pathologies With Autonomous Externally Controllable Nanonetworks: A Transdisciplinary Approach With Bio-Nanodevices Interfaces (GLADIATOR), (Funded by the EC H2020: FET Open Program, 01.01.2019-31.12.2022, award EUR 5.9 million)

5. Coordinator/Principle Investigator of Wireless In-Body Environment (WiBEC), (Funded by the EC, H2020- MARIE Skodowska-CURIE ACTIONS (MSCA-ITN-2015), 01.01.2016-31.12.2019, award EUR 3.957 million)

6. Work Package Leader of ULTRASPONDER, (Funded by the European Union 7th Framework Program, STREP, 01.09.2008 -31.08.2011, award EUR 4.5 million)



Jingyue Li

Department of Computer Science
Faculty of Information Technology and Electrical Engineering

Contact information

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+47 91897446

Relevant links outside academia

DNV, SINTEF, Equinor, NGI, NAV

Relevant projects

Platform as Service Technologies for High-performance Blockchain-based Supply Chain Management Systems (PaaSforChain) (2020-2023) (PI)

A Smart Mobile App to Facilitate Rehabilitation of Stroke Patients (SmartRehab)(2020-2021)(PI)

CyberSmart - Cybersecurity, Safety, and Resilience of Smart cities (2017-2020) (PI) -

Management of Safety and Security Risks for Cyber-Physical Systems (2017-2020) (PI)

Expertise

Software engineering, Software verification and validation, Blockchain technologies, Software security, AI robustness

Expertise specific to this call:

software engineering, AI robustness, cybersecurity

CIRCit - Circular Economy Integration in the Nordic Industry for Enhanced Sustainability and Competitiveness (2017-2020) (Work Package leader)

SAREPTA - Safety, Autonomy, Remote Control and Operations of Industrial Transport Systems (2017-2020) (Key Scientist)

SafeCop – Safe Cooperating Cyber-Physical Systems using Wireless Communication (2016-2019) (Key Scientist)

Model-Based Testing of Spacecraft Control Software (2011-2013) (Key Scientist)



Eilif Hjelseth

Department of Civil and Environmental Engineering
Faculty of Engineering

Contact information

eilif.hjelseth@ntnu.no
+4795266100

Relevant links outside academia

Board member of
BuildingSMART Norway

Head of the digitalization
group at Prosjekt Norge

Expertise

- Digitalization of construction processes
- Building Information Modelling (BIM)
- Virtual Design and Construction (VDC)
- Development of knowledge-based expert systems
- Transformation of codes and regulations into automatic/semiautomatic validations
- Digitalization of sustainability requirements
- Change management
- Digital solutions for Project management
- Information Managements
- Standardization

Relevant projects

DigiPlace - Development of a framework for a digital European platform

Growing Circle - digital solution for increased circularity, digital passport and digital twins

Bridging the Gap - Holistic requirement for the entire lifecycle

Standardization at international (ISO), European (CEN) and national (NS) levels



Arvind Sharma

Department of Information Security and Communication Technology
Faculty of Information Technology and Electrical Engineering

Contact information

arvind.sharma@ntnu.no
+47 46710948

Relevant links outside academia

Security Industries and research institutions

Expertise

IoT, Embedded System, Hardware Security, Supply chain, Cyber security, Digital Twin

Expertise specific to this call:

Technology assessment, testing, product development, techno-economic study

Relevant projects

Norwegian centre of Cyber Security for Critical infrastructure (NORCICS)



Kjersti Kjos Longva

Department of International Business
Faculty of Economics and Management

Contact information

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+47 70 16 12 94

Relevant links outside academia

Industry, cluster organizations, entrepreneurs and public sector.

Expertise

Entrepreneurship, SMEs, entrepreneurship education, innovation in education, management education, innovation skills, innovation processes, university-industry collaboration, sustainable business models.

Relevant projects

ERASMUS+ project BLUEWBC Sustainable development of BLUE Economics through higher education and innovation in Western Balkan Countries.

InnoPraxis - Innovative internships in business education.

TEFT-lab at NTNU.



Fabio Sgarbossa

Department of Mechanical and Industrial Engineering
Faculty of Engineering

Contact information

fabio.sgarbossa@ntnu.no
+4790768098

Expertise

Logistics, Operations and Supply Chain Management, Industrial and Systems Engineering, Industry 4.0 and 5.0, Circular Economy, Material Handling and Warehousing, Human-Factors and Ergonomics, Human-Centric Production and Logistics systems, Maintenance Management.

Relevant projects

EU projects:
Lean 4.0; H2GLASS; MAIA; DE2HUMAN

National projects:
Digimat; DigCBA; SmartLIB; FutureLOG



Ilangko Balasingham

Department of Electronic Systems
Faculty of Information Technology and Electrical Engineering

Contact information

ilangko.balasingham@ntnu.no
+ 4793459022

Relevant links outside academia

Industry (medtech)

Expertise

- Microscale antennas and wireless communication systems
- Passive (battery-free) wireless communication methods
- Passive microimplants for actuation, sensing and communication
- Medical signal and image processing using machine learning algorithms
- Molecular communication technology (nanoscale communication modeling and data inference)

Relevant projects

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6. Work Package Leader of ULTRASPONDER, (Funded by the European Union 7th Framework Program, STREP, 01.09.2008 -31.08.2011, award EUR 4.5 million)



Per Gunnar Kjeldsberg

Department of Electronic Systems
Faculty of Information Technology and Electrical Engineering

Contact information

pgk@ntnu.no
+47 7359 4405

Relevant links outside academia

Close cooperation with Norwegian electronics industry. E.g., Nordic Semiconductor, ARM Norway, Microchip, Sony Nordic, Ideas, Silicon Labs, Texas Instruments

Expertise

Embedded heterogeneous multi-processor systems, with a focus on energy efficient multi-media and digital signal processing applications.

Relevant projects

Run-time Exploitation of Application Dynamism for Energy-efficient Exascale computing [LINK](#)

Towards Ubiquitous Low-power Image Processing Platforms [LINK](#)

Low Power and Fault Tolerant Cache Memory Design through a Combination of Hardware and Software Approaches [LINK](#)



Jingyue Li

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Relevant links outside academia

DNV, SINTEF, Equinor, NGI, NAV

Expertise

Software engineering, Software verification and validation,
Blockchain technologies, Software security, AI robustness

Expertise specific to this call:

Blockchain, software engineering, AI robustness,
cybersecurity

Relevant projects

Platform as Service Technologies for High-performance
Blockchain-based Supply Chain Management Systems
(PaaSforChain) (2020-2023) (PI)

A Smart Mobile App to Facilitate Rehabilitation of Stroke
Patients (SmartRehab)(2020-2021)(PI)

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Physical Systems (2017-2020) (PI)

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Industry for Enhanced Sustainability and
Competitiveness (2017-2020) (Work Package leader)

SAREPTA - Safety, Autonomy, Remote Control and
Operations of Industrial Transport Systems (2017-
2020) (Key Scientist)

SafeCop – Safe Cooperating Cyber-Physical Systems
using Wireless Communication (2016-2019) (Key
Scientist)

Model-Based Testing of Spacecraft Control Software
(2011-2013) (Key Scientist)



Arvind Sharma

Department of Information Security and Communication
Technology
Faculty of Information Technology and Electrical Engineering

Contact information

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+47 46710948

Relevant links outside academia

Security Industries and
research institutions

Expertise

IoT, Embedded System, Hardware
Security, Supply chain, Cyber security,
Digital Twin

Expertise specific to this call:

Technology assessment, testing,
product development, techno-
economic study

Relevant projects

Norwegian centre of Cyber
Security for Critical
infrastructures (**NORCICS**)

HORIZON-CL4-2024-DATA-01-05: PLATFORM BUILDING, STANDARDISATION AND UP-SCALING OF THE 'CLOUD-EDGE-IOT' SOLUTIONS (HORIZONTAL ACTIVITIES - CSA)



Per Gunnar Kjeldsberg

Department of Electronic Systems

Faculty of Information Technology and Electrical Engineering

Contact information

pgk@ntnu.no
+47 7359 4405

Relevant links outside academia

Close cooperation with Norwegian electronics industry. E.g., Nordic Semiconductor, ARM Norway, Microchip, Sony Nordic, Ideas, Silicon Labs, Texas Instruments

Expertise

Embedded heterogeneous multi-processor systems, with a focus on energy efficient multi-media and digital signal processing applications.

Relevant projects

Run-time Exploitation of Application Dynamism for Energy-efficient Exascale computing [LINK](#)

Towards Ubiquitous Low-power Image Processing Platforms [LINK](#)

Low Power and Fault Tolerant Cache Memory Design through a Combination of Hardware and Software Approaches [LINK](#)



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+47 46710948

Relevant links outside academia

Security Industries and research institutions

Expertise

IoT, Embedded System, Hardware Security, Supply chain, Cyber security, Digital Twin

Expertise specific to this call:

Technology assessment, testing, product development, techno-economic study

Relevant projects

Norwegian centre of Cyber Security for Critical infrastructure (NORCICS)





ASSOCIATED PROFESSORS

Destination 4:

Digital and emerging technologies for competitiveness and fit for the green deal

Here you can find potential NTNU researchers that are interested in collaborations on destination 4.

The following pages are sorted into the calls for the destination presented in the draft for cluster 4. To simplify your navigation among available expertises per topic, the list of topics have been made clickable.

DESTINATION 4 - CALLS

Click on the call to be directed to its page

Call - Digital and emerging technologies for competitiveness and fit for the Green Deal

AI, Data and Robotics (incl. efficient, robust, safe, adaptive and trusted robots)

[HORIZON-CL4-2024-DIGITAL-EMERGING-01-03: Novel paradigms and approaches, towards AI-powered robots– step change in functionality \(AI, data and robotics partnership\) \(RIA\)](#)

[HORIZON-CL4-2024-DIGITAL-EMERGING-01-04: Industrial leadership in AI, Data and Robotics boosting competitiveness and the green transition \(AI Data and Robotics Partnership\) \(IA\)](#)

Open Source for Cloud/Edge and Software Engineering Fundamentals to support Digital Autonomy

[HORIZON-CL4-2024-DIGITAL-EMERGING-01-22: Fundamentals of Software Engineering \(RIA\) 246 European Innovation Leadership in Photonics.](#)

[HORIZON-CL4-2024-DIGITAL-EMERGING-01-54: Smart photonics for joint communication & sensing and access everywhere \(Photonics Partnership\) \(RIA\)](#)

[HORIZON-CL4-2024-DIGITAL-EMERGING-01-55: Photonics Innovation Factory for Europe \(Photonics Partnership\) \(IA\)](#)

DESTINATION 4 - CALLS

Click on the call to be directed to its page

Call - Digital and emerging technologies for competitiveness and fit for the Green Deal

Open Source for Cloud/Edge and Software Engineering Fundamentals to support Digital Autonomy

[HORIZON-CL4-2024-DIGITAL-EMERGING-01-21: Open Source for Cloud/Edge to support European Digital Autonomy_\(RIA\)](#)

[HORIZON-CL4-2024-DIGITAL-EMERGING-01-23: Public recognition scheme for Open Source \(CSA\)](#)

Graphene and 2D materials: Europe in the lead.

HORIZON-CL4-2024-DIGITAL-EMERGING-01-31: Pilot line(s) for 2D materials-based devices (RIA)

HORIZON-CL4-2024-DIGITAL-EMERGING-01-34: Synergy with national and regional initiatives in Europe (CSA)

Flagship on Quantum Technologies: a Paradigm Shift

HORIZON-CL4-2024-DIGITAL-EMERGING-01-42: Stimulating transnational research and development of next generation quantum technologies, including basic theories and components (Cascading grant with FSTP)

[HORIZON-CL4-2024-DIGITAL-EMERGING-01-45: Quantum sensing and metrology for market uptake \(IA\)](#)



Hedvig Aminoff

Department of Design
Faculty of Architecture and Design

Contact information

hedvig.aminoff@gmail.com
+46734606075

Expertise

- Human Centered Design
- Human-machine interaction
- Human Factors and Systems safety
- Resilience engineering/Cognitive Systems Engineering
- Qualitative research
- Ethnographic methods
- Information visualisation

Expertise specific to this call:

Human-machine interaction, human factors, UX design and usability assessment

Relevant projects

LASH FIRE- a Horizon2020 project for developing maritime fire safety solutions with innovative technologies, operations and applications. A consortium with 26 partners from 13 Member States of the EU.



Leonardo Montecchi

Department of Computer Science
Faculty of Engineering

Contact information

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+47 4628 6498

Relevant links outside academia

ResilTech s.r.l. (Italy):

Instituto Nacional de
Pesquisas Espaciais, Brazil
(National Space Research
Institute of Brazil)

Expertise

Expertise in different kind of modeling techniques for the specification and verification of non-functional properties of complex systems.

System-level Verification & Validation,
Model-Based Systems Engineering,
Model-Driven Engineering, Reliability
Evaluation, RAMS, Stochastic Petri Nets.

Relevant projects

ADVANCE (MSCA-RISE-2018-823788),
CONCERTO (ARTEMIS-2012-1-333053),
CHESS (ARTEMIS-2008-1-100022)



Jingyue Li

Department of Computer Science
Faculty of Information Technology and Electrical Engineering

Contact information

jingyue.li@ntnu.no
+47 91897446

Relevant links outside academia

DNV, SINTEF, Equinor, NGI, NAV

Expertise

Software engineering, Software verification and validation,
Blockchain technologies, Software security, AI robustness

Expertise specific to this call:

Software verification and validation, AI robustness,
cybersecurity

Relevant projects

Platform as Service Technologies for High-performance
Blockchain-based Supply Chain Management Systems
(PaaSforChain) (2020-2023) (PI)

A Smart Mobile App to Facilitate Rehabilitation of Stroke
Patients (SmartRehab)(2020-2021)(PI)

CyberSmart - Cybersecurity, Safety, and Resilience of
Smart cities (2017-2020) (PI) -

Management of Safety and Security Risks for Cyber-
Physical Systems (2017-2020) (PI)

CIRCit - Circular Economy Integration in the Nordic
Industry for Enhanced Sustainability and
Competitiveness (2017-2020) (Work Package leader)

SAREPTA - Safety, Autonomy, Remote Control and
Operations of Industrial Transport Systems (2017-
2020) (Key Scientist)

SafeCop - Safe Cooperating Cyber-Physical Systems
using Wireless Communication (2016-2019) (Key
Scientist)

Model-Based Testing of Spacecraft Control Software
(2011-2013) (Key Scientist)



Eleftherios Papachristou

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Faculty of Architecture and Design

Contact information

eleftherios.papachristos@ntnu.no
+47 47707238

Expertise

- Human-Centred Artificial Intelligence design
- Human-Computer Interaction
- Interaction design
- Conversational Interfaces,
- Value-centered AI
- Ethics/trust/transparency and AI
- Interface Evaluation.

Relevant projects

rurALLURE (EU H2020 CSA)

INTER-SOCIAL (EU INTERREG)

SERIES (EU FP7 CSA)

QALIBRA (EU FP6 CSA)



Lars Tingelstad

Department of Mechanical and Industrial Engineering
Faculty of Engineering

Contact information

lars.tingelstad@ntnu.no
+47 97736854

Expertise

Robotics and automation:

- Industrial robots
- robotic production
- robotic manipulation
- mobile manipulators
- constraint-based robot programming
- computer vision, robot learning



Hedvig Aminoff

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Faculty of Architecture and Design

Contact information

hedvig.aminoff@gmail.com
+46734606075

Expertise

- Human Centered Design
- Human-machine interaction
- Human Factors and Systems safety
- Resilience engineering/Cognitive Systems Engineering
- Qualitative research
- Ethnographic methods
- Information visualisation

Expertise specific to this call:
Human-machine interaction, human factors, UX design and usability assessment

Relevant projects

LASH FIRE- a Horizon2020 project for developing maritime fire safety solutions with innovative technologies, operations and applications. A consortium with 26 partners from 13 Member States of the EU.



Fabio Sgarbossa

Department of Mechanical and Industrial Engineering
Faculty of Engineering

Contact information

fabio.sgarbossa@ntnu.no
+4790768098

Expertise

Logistics, Operations and Supply Chain Management, Industrial and Systems Engineering, Industry 4.0 and 5.0, Circular Economy, Material Handling and Warehousing, Human-Factors and Ergonomics, Human-Centric Production and Logistics systems, Maintenance Management.

Relevant projects

EU projects:
Lean 4.0; H2GLASS; MAIA; DE2HUMAN

National projects:
Digimat; DigCBA; SmartLIB; FutureLOG



Eleftherios Papachristou

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Faculty of Architecture and Design

Contact information

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+47 47707238

Expertise

- Human-Centred Artificial Intelligence design
- Human-Computer Interaction
- Interaction design
- Conversational Interfaces,
- Value-centered AI
- Ethics/trust/transparency and AI
- Interface Evaluation.

Relevant projects

rurALLURE (EU H2020 CSA)
INTER-SOCIAL (EU INTERREG)
SERIES (EU FP7 CSA)
QALIBRA (EU FP6 CSA)



Jingyue Li

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Faculty of Information Technology and Electrical Engineering

Contact information

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+47 91897446

Relevant links outside academia

DNV, SINTEF, Equinor, NGI, NAV

Expertise

Software engineering, Software verification and validation,
Blockchain technologies, Software security, AI robustness

Expertise specific to this call:

Software verification and validation, AI robustness,
cybersecurity

Relevant projects

Platform as Service Technologies for High-performance
Blockchain-based Supply Chain Management Systems
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Scientist)

Model-Based Testing of Spacecraft Control Software
(2011-2013) (Key Scientist)



Leonardo Montecchi

Department of Computer Science
Faculty of Engineering

Contact information

leonardo.montecchi@ntnu.no
+47 4628 6498

Relevant links outside academia

ResilTech s.r.l. (Italy):

Instituto Nacional de
Pesquisas Espaciais, Brazil
(National Space Research
Institute of Brazil)

Expertise

Expertise in different kind of modeling
techniques for the specification and
verification of non-functional properties
of complex systems.

System-level Verification & Validation,
Model-Based Systems Engineering,
Model-Driven Engineering, Reliability
Evaluation, RAMS, Stochastic Petri Nets.

Relevant projects

ADVANCE (MSCA-RISE-2018-823788),

CONCERTO (ARTEMIS-2012-1-333053),

CHESS (ARTEMIS-2008-1-100022)

HORIZON-CL4-2024-DIGITAL-EMERGING-01-21: OPEN SOURCE FOR CLOUD/EDGE AND SOFTWARE ENGINEERING TO SUPPORT EUROPEAN DIGITAL AUTONOMY (RIA)



Jingyue Li

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Faculty of Information Technology and Electrical Engineering

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+47 91897446

Relevant links outside academia

DNV, SINTEF, Equinor, NGL, NAV

Expertise

Software engineering, Software verification and validation, Blockchain technologies, Software security, AI robustness

Expertise specific to this call:

Software engineering, open source

Relevant projects

Platform as Service Technologies for High-performance Blockchain-based Supply Chain Management Systems (PaaSforChain) (2020-2023) (PI)

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Faculty of Engineering

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+47 4628 6498

Relevant links outside academia

ResilTech s.r.l. (Italy):

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Pesquisas Espaciais, Brazil
(National Space Research
Institute of Brazil)

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Evaluation, RAMS, Stochastic Petri Nets.

Relevant projects

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CONCERTO (ARTEMIS-2012-1-333053),

CHESS (ARTEMIS-2008-1-100022)



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Relevant links outside academia

DNV, SINTEF, Equinor, NGL, NAV

Expertise

Software engineering, Software verification and validation,
Blockchain technologies, Software security, AI robustness

Expertise specific to this call:

Software engineering, open source, software security,
blockchain software engineering

Relevant projects

Platform as Service Technologies for High-performance
Blockchain-based Supply Chain Management Systems
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SafeCop - Safe Cooperating Cyber-Physical Systems
using Wireless Communication (2016-2019) (Key
Scientist)

Model-Based Testing of Spacecraft Control Software
(2011-2013) (Key Scientist)



Govert Valkenburg

Department of Interdisciplinary Studies of Culture
Faculty of Humanities

Contact information

govert.valkenburg@ntnu.no
+47 94896748

Expertise

Interpretive social-scientific expertise. **Social scientist** with additional backgrounds in engineering and classical music, well-versed in processes of knowledge production, knowledge exchange, and the use of knowledge for democratic and managerial processes.

Has contracted important expertise in connecting high-tech research and development with traditional and indigenous knowledges, and with cultural categories, moral and ethical frameworks, and public and political debate.

These connections have been made across such diverse fields as energy and sustainability transitions, medical research, infrastructures, and digital technologies in relation to privacy and security.

Relevant projects

My research experience of 20 years has been entirely project-based.

European projects have included:

PRISMS (privacy and security),

MILESECURE2050 (low-carbon transitions and energy security).



Astrid S. de Wijn

Department of Mechanical and Industrial Engineering
Faculty of Engineering

Contact information

astrid.dewijn@ntnu.no

Expertise

Theory and modelling - tribology, surface science, transport properties, nonlinear dynamics, condensed matter

We develop models for transport of matter, energy, and momentum, and relate it to microscopic nonlinear dynamics. We currently focus on two types of systems:

- 1) molecules and nanoscale objects, especially in the context of friction, and
- 2) gases and liquids of various levels of complexity.

We employ computational (Molecular Dynamics and Monte-Carlo) as well as analytical methods to solve applied and fundamental problems. We collaborate with experimental as well as theoretical researchers from a wide variety of fields, ranging from chemical engineering to mathematical physics. The materials we study the most at the moment are electrolytes, polymers, and 2d materials.



Jingyue Li

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Faculty of Information Technology and Electrical Engineering

Contact information

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Relevant links outside academia

DNV, SINTEF, Equinor, NGI, NAV

Expertise

Software engineering, Software verification and validation,
Blockchain technologies, Software security, AI robustness

Expertise specific to this call:

Software engineering, open source, software security

Relevant projects

Platform as Service Technologies for High-performance
Blockchain-based Supply Chain Management Systems
(PaaSforChain) (2020-2023) (PI)

A Smart Mobile App to Facilitate Rehabilitation of Stroke
Patients (SmartRehab)(2020-2021)(PI)

CyberSmart - Cybersecurity, Safety, and Resilience of
Smart cities (2017-2020) (PI) -

Management of Safety and Security Risks for Cyber-
Physical Systems (2017-2020) (PI)

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2020) (Key Scientist)

SafeCop - Safe Cooperating Cyber-Physical Systems
using Wireless Communication (2016-2019) (Key
Scientist)

Model-Based Testing of Spacecraft Control Software
(2011-2013) (Key Scientist)



Andreas Erbe

Department of Materials Science and Engineering
Faculty of Natural Science

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+47 73594048

Relevant links outside academia

Many industry partners (metal-producing industries in Norway and other parts of Europe; surface pretreatment producing industries); Public sectors (e.g., local museums).

Expertise

- Materials degradation (corrosion) on a molecular, mesoscopic to macroscopic level
- Materials interaction with environment (incl. complex biological environments in the body)
- Vibrational spectroscopy (IR, Raman) in complex matrices, especially for materials surface analysis, study of solvation, and in combination with electrochemical techniques
- Surface treatment of metals and semiconductors (pretreatment, etching, etc.) incl. recycled aluminium
- Electrochemical techniques
- Data analysis and machine learning techniques in relation to the above

Relevant projects

Many fundamental and applied research projects, most of them via national funding initiative, but also including MSCA-ITN



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Expertise

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- Surface treatment of metals and semiconductors (pretreatment, etching, etc.) incl. recycled aluminium
- Electrochemical techniques
- Data analysis and machine learning techniques in relation to the above

Relevant projects

Many fundamental and applied research projects, most of them via national funding initiative, but also including MSCA-ITN



ASSOCIATED PROFESSORS

Destination 5:

Open strategic autonomy in developing, deploying and using global space-based infrastructures, services, applications and data

Here you can find potential NTNU researchers that are interested in collaborations on destination 5.

The following pages are sorted into the calls for the destination presented in the draft for cluster 4. To simplify your navigation among available expertises per topic, the list of topics have been made clickable.

DESTINATION 5 - CALLS

Click on the call to be directed to its page

Call - STRATEGIC AUTONOMY IN DEVELOPING, DEPLOYING AND USING GLOBAL SPACE-BASED INFRASTRUCTURES, SERVICES, APPLICATIONS AND DATA 2024.

Reinforce EU capacity to access to space.

Evolution of services: Copernicus.

HORIZON-CL4-2024-SPACE-01-35: Copernicus for Land and Water

HORIZON-CL4-2024-SPACE-01-36: Copernicus for Security.

Development of applications for Galileo, EGNOS and Copernicus, PRS and GOVSATCOM...

Innovative space capabilities: SSA, GOVSATCOM, Quantum..

HORIZON-CL4-2024-SPACE-01-64: Quantum Space Gravimetry Phase-B study & Technology Maturation.

Targeted and strategic actions supporting the EU space sector

HORIZON-CL4-2024-SPACE-01-73: Space technologies for European non-dependence and competitiveness.

Evolution of Galileo and EGNOS services and infrastructure.



ASSOCIATED PROFESSORS

Destination 6:

A human-centred and ethical development of digital and industrial technologies

Here you can find potential NTNU researchers that are interested in collaborations on destination 6.

The following pages are sorted into the calls for the destination presented in the draft for cluster 4. To simplify your navigation among available expertises per topic, the list of topics have been made clickable.

DESTINATION 6 - CALLS

Click on the call to be directed to its page

Call - A human-centred and ethical development of digital and industrial technologies.

Leadership in AI based on trust

[HORIZON-CL4-2024-HUMAN-01-06: Explainable and Robust AI \(AI Data and Robotics Partnership\) \(RIA\)](#)

[HORIZON-CL4-2024-HUMAN-01-07: Collaborative intelligence – combining the best of machine and human \(AI Data and Robotics Partnership\) \(RIA\)](#)

Systemic approaches for accelerating uptake of technology and innovation.

[HORIZON-CL4-2024-HUMAN-01-34: Support for transnational activities of National Contact Points in the thematic areas of Digital, Industry and Space \(CSA\)](#)

European standards for industrial competitiveness.

[HORIZON-CL4-2024-HUMAN-01-61: Facilitate the engagement in global ICT standardisation development \(CSA\)](#)



Govert Valkenburg

Department of Interdisciplinary Studies of Culture
Faculty of Humanities

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+47 94896748

Expertise

Interpretive social-scientific expertise. **Social scientist** with additional backgrounds in engineering and classical music, well-versed in processes of knowledge production, knowledge exchange, and the use of knowledge for democratic and managerial processes.

Has contracted important expertise in connecting high-tech research and development with traditional and indigenous knowledges, and with cultural categories, moral and ethical frameworks, and public and political debate.

These connections have been made across such diverse fields as energy and sustainability transitions, medical research, infrastructures, and digital technologies in relation to privacy and security.

Relevant projects

My research experience of 20 years has been entirely project-based.

European projects have included:

PRISMS (privacy and security),

MILESECURE2050 (low-carbon transitions and energy security).



Leonardo Montecchi

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Faculty of Engineering

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Relevant links outside academia

ResilTech s.r.l. (Italy):

Instituto Nacional de Pesquisas Espaciais, Brazil
(National Space Research Institute of Brazil)

Expertise

Expertise in different kind of modeling techniques for the specification and verification of non-functional properties of complex systems.

System-level Verification & Validation, Model-Based Systems Engineering, Model-Driven Engineering, Reliability Evaluation, RAMS, Stochastic Petri Nets.

Relevant projects

ADVANCE (MSCA-RISE-2018-823788),

CONCERTO (ARTEMIS-2012-1-333053),

CHESS (ARTEMIS-2008-1-100022)



Jingyue Li

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Relevant links outside academia

DNV, SINTEF, Equinor, NGL, NAV

Expertise

Software engineering, Software verification and validation,
Blockchain technologies, Software security, AI robustness

Expertise specific to this call:

software verification and validation, AI robustness,
cybersecurity

Relevant projects

Platform as Service Technologies for High-performance
Blockchain-based Supply Chain Management Systems
(PaaSforChain) (2020-2023) (PI)

**A Smart Mobile App to Facilitate Rehabilitation of Stroke
Patients (SmartRehab)**(2020-2021)(PI)

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2020) (Key Scientist)

SafeCop - Safe Cooperating Cyber-Physical Systems
using Wireless Communication (2016-2019) (Key
Scientist)

Model-Based Testing of Spacecraft Control Software
(2011-2013) (Key Scientist)



Eleftherios Papachristou

Department of Design
Faculty of Architecture and Design

Contact information

eleftherios.papachristos@ntnu.no
+47 47707238

Expertise

- Human-Centred Artificial Intelligence design
- Human-Computer Interaction
- Interaction design
- Conversational Interfaces,
- Value-centered AI
- Ethics/trust/transparency and AI
- Interface Evaluation.

Relevant projects

rurALLURE (EU H2020 CSA)

INTER-SOCIAL (EU INTERREG)

SERIES (EU FP7 CSA)

QALIBRA (EU FP6 CSA)



Lars Tingelstad

Department of Mechanical and Industrial Engineering
Faculty of Engineering

Contact information

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+47 97736854

Expertise

Robotics and automation:

- Industrial robots
- robotic production
- robotic manipulation
- mobile manipulators
- constraint-based robot programming
- computer vision, robot learning



Erlend Alfnes

Mechanical and Industrial Engineering
Faculty of Engineering

Contact information

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+4709291145

Expertise

- Operations and Supply Chain Management
- Production Logistics
- Industry 4.0 and 5.0
- Operations Excellence
- Circular Economy
- Mass Customization
- Project Supply Chains
- Enterprise Resource Planning

Relevant projects

European projects:

- **Lean 4.0:** Lean European Action-learning Network utilizing Industry 4.0
- **EuroLean+:** European Lean Enterprise Alliance

National projects:

- **Respons:** Smart planning in supply chains for manufacturing of advanced ship equipment
- **Soundchain:** Effective supply chains for manufacturing of underwater sensor systems

HORIZON-CL4-2024-HUMAN-01-07: COLLABORATIVE INTELLIGENCE – COMBINING THE BEST OF MACHINE AND HUMAN (AI DATA AND ROBOTICS PARTNERSHIP) (RIA)



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Faculty of Information Technology and Electrical Engineering

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Relevant links outside academia

DNV, SINTEF, Equinor, NGI, NAV

Expertise

Software engineering, Software verification and validation, Blockchain technologies, Software security, AI robustness

Expertise specific to this call:

Automatic code generation using AI models to help developers speed up software development

Relevant projects

Platform as Service Technologies for High-performance Blockchain-based Supply Chain Management Systems (PaaSforChain) (2020-2023) (PI)

A Smart Mobile App to Facilitate Rehabilitation of Stroke Patients (SmartRehab)(2020-2021)(PI)

CyberSmart - Cybersecurity, Safety, and Resilience of Smart cities (2017-2020) (PI) -

Management of Safety and Security Risks for Cyber-Physical Systems (2017-2020) (PI)

CIRCit - Circular Economy Integration in the Nordic Industry for Enhanced Sustainability and Competitiveness (2017-2020) (Work Package leader)

SAREPTA - Safety, Autonomy, Remote Control and Operations of Industrial Transport Systems (2017-2020) (Key Scientist)

SafeCop – Safe Cooperating Cyber-Physical Systems using Wireless Communication (2016-2019) (Key Scientist)

Model-Based Testing of Spacecraft Control Software (2011-2013) (Key Scientist)



Eleftherios Papachristou

Department of Design
Faculty of Architecture and Design

Contact information

eleftherios.papachristos@ntnu.no
+47 47707238

Expertise

- Human-Centred Artificial Intelligence design
- Human-Computer Interaction
- Interaction design
- Conversational Interfaces, Value-centered AI
- Ethics/trust/transparency and AI
- Interface Evaluation.

Relevant projects

zurALLURE (EU H2020 CSA)

INTER-SOCIAL (EU INTERREG)

SERIES (EU FP7 CSA)

QALIBRA (EU FP6 CSA)



Hedvig Aminoff

Department of Design
Faculty of Architecture and Design

Contact information

hedvig.aminoff@gmail.com
+46734606075

Expertise

- Human Centered Design
- Human-machine interaction
- Human Factors and Systems safety
- Resilience engineering/Cognitive Systems Engineering
- Qualitative research
- Ethnographic methods
- Information visualisation

Expertise specific to this call:

Human-machine interaction, human factors, UX design and usability assessment

Relevant projects

LASH FIRE- a Horizon2020 project for developing maritime fire safety solutions with innovative technologies, operations and applications. A consortium with 26 partners from 13 Member States of the EU.



Erlend Alfnes

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Faculty of Engineering

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Expertise

- Operations and Supply Chain Management
- Production Logistics
- Industry 4.0 and 5.0
- Operations Excellence
- Circular Economy
- Mass Customization
- Project Supply Chains
- Enterprise Resource Planning

Relevant projects

European projects:

- **Lean 4.0:** Lean European Action-learning Network utilizing Industry 4.0
- **EuroLean+:** European Lean Enterprise Alliance

National projects:

- **Respons:** Smart planning in supply chains for manufacturing of advanced ship equipment
- **Soundchain:** Effective supply chains for manufacturing of underwater sensor systems

HORIZON-CL4-2024-HUMAN-01-61: FACILITATE THE ENGAGEMENT IN GLOBAL ICT STANDARDISATION DEVELOPMENT (CSA)



Jingyue Li

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Relevant links outside academia

DNV, SINTEF, Equinor, NGI, NAV

Expertise

Software engineering, Software verification and validation,
Blockchain technologies, Software security, AI robustness

Expertise specific to this call:

Software verification and validation, AI robustness,
cybersecurity

Relevant projects

Platform as Service Technologies for High-performance
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(2011-2013) (Key Scientist)



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