Position Description

1. General Information

Name of the position	**Resilience of supply chains – applications of sustainability and artificial intelligence**
Foreseen enrolment date	September 2025
Position is funded by	• COFUND, Marie Skłodowska-Curie Actions (MSCA), Horizon Europe, European Union • University of Vaasa • RMIT University
Research Host	University of Vaasa
PhD awarding institutions	University of Vaasa & RMIT University
Locations	Primary: Vaasa, Finland Secondary: Melbourne, Australia
Salary	30,605.12 EUR annual **gross** salary (2,448.41 EUR monthly gross salary)
Supervisors	• Petri Helo, Professor, University of Vaasa • Khuram Shahzad, Assistant Professor, University of Vaasa • Vinh Thai, Professor, RMIT University • Aswini Yadlapalli, Lecturer, RMIT University • Industry Partner: Merinova Oy (Tauno Kekäle)
Group of discipline	Industrial Management, Logistics and Supply Chain Management

2. Research topics (only one of these projects will be funded)

Project 1: *Supply Chain Management Applications and Artificial Intelligence*
This research focuses on leveraging artificial intelligence (AI) to optimize supply chain management (SCM) processes. It explores AI-driven techniques, such as machine learning, predictive analytics, and natural language processing, to address challenges in demand forecasting, inventory management, and logistics optimization. By integrating AI into SCM, the study aims to enhance decision-making, minimize disruptions, and improve operational efficiency. This project requires actual technical implementation of AI based tools, programming languages and libraries with the context of industrial supply chains. The focal area of this project is to build proof of concept type of solutions and demonstrate their applicability in real-life problems. Use of AI tools is important for successful implementation of this work.
Supervisors: Petri Helo (UVA), Khuram Shahzad (UVA), Vinh Thai (RMIT), Aswini Yadlapalli (RMIT)

This project has received funding from the European Union's Horizon Europe research and innovation programme under the Marie Skłodowska-Curie grant agreement № 101179842

Research Fields: Artificial Intelligence, Supply Chain Management

Project 2: ***Modelling Resilient Supply Chains: Strategies for Disruption Mitigation***
This topic focuses on developing models to enhance the resilience of supply chains against disruptions such as changes in demand or supply. It aims to employ quantitative methods, including systems dynamics, optimisation and stochastic modelling, to identify critical vulnerabilities and test various mitigation strategies. By emphasizing risk assessment and recovery strategies, the research aims to provide actionable frameworks for organizations seeking to build robust supply chains capable of withstanding and recovering from adverse events effectively. The focal area of this project is to analyse logistics transportation related supply chains or industrial supply chains. Simulation and modelling techniques will be used to create a platform for testing various resiliency scenarios. Use of analysis and modelling tools is important for successful implementation of this work.
Supervisors: Petri Helo (UVA), Khuram Shahzad (UVA), Vinh Thai (RMIT), Aswini Yadlapalli (RMIT)
Research Fields: Supply Chain Management, Systems Dynamics

Project 3: ***Applications of Sustainability in Supply Chain Management***
This research investigates strategies for embedding sustainability into supply chain operations, focusing on reducing carbon footprints, minimizing waste, and fostering circular economy practices. It examines real-world applications of sustainable practices, such as life-cycle analyses, green logistics, eco-friendly procurement, and energy-efficient warehousing. The study also evaluates the role of digital technologies and management of product variety as well as tracking and enhancing sustainability metrics across the supply chain. The focal area of this project is to build decision support systems for analysing trade-off situations related to environmental sustainability and other performance metrics such as lead-time, cost, and on-time delivery performance. Use of analysis and modelling tools is important for successful implementation of this work.
Supervisors: Petri Helo (UVA), Khuram Shahzad (UVA), Vinh Thai (RMIT), Aswini Yadlapalli (RMIT)
Research Fields: Supply Chain Management, Systems Dynamics

3. Employment Benefits and Conditions

The University of Vaasa offers maximum a 48-month full-time work contract. A probation period of maximum 6 months can be applied, and the annual workload for researchers is 1,612 hours / year.

The remuneration, in line with the European Commission rules for Marie Skłodowska-Curie grant holders, will consist of a **gross annual salary** of yearly 30,605.12 EUR (monthly 2,448.41 EUR gross). Of this amount, the estimated net salary to be perceived by the Researcher is 1,958.728 EUR per month. However, the definite amount to be received by the Researcher is subject to national tax legislation.

This project has received funding from the European Union's Horizon Europe research and innovation programme under the Marie Skłodowska-Curie grant agreement № 101179842

Benefits include

- Becoming a Marie Skłodowska-Curie fellow and be invited to join the Marie Curie Alumni Association
- Access to all the necessary facilities at University of Vaasa and RMIT University
- Tuition fees exemption at both PhD awarding institutions
- Travel allowance to cover flights and accommodation for participating in DREAM+PLAN events
- Up to 12 months in Australia
- 30 days paid holiday leave
- Social security coverage
- Sick leave
- Parental leave

4. PhD enrolment

Successful candidates for this position will be enrolled by the following institutions and must comply with their specific entry requirements, in addition to DREAM+PLAN's conditions.

University of Vaasa

To enrol in a Doctorate program you must meet the general conditions, which can be found through this link: Admissions to doctoral studies | University of Vaasa.

RMIT University

Visit the website: https://www.rmit.edu.au/research/research-degrees/how-to-apply

This project has received funding from the European Union's Horizon Europe research and innovation programme under the Marie Skłodowska-Curie grant agreement Nº 101179842