Position Description

1. General Information

Name of the position	**Resilient Technological strategies to reduce decision-making uncertainties**
Foreseen enrolment date	September 2025
Position is funded by	• COFUND, Marie Skłodowska-Curie Actions (MSCA), Horizon Europe, European Union • LUT University • RMIT University
Research Host	LUT University
PhD awarding institutions	LUT University & RMIT University
Locations	Primary: Kouvola, Finland Secondary: Melbourne, Australia
Salary	32 600 EUR annual **gross** salary (2 716 EUR monthly gross salary)
Supervisors	• Marko Torkkeli, Professor, LUT University • Adeel Tariq, Post Doctoral Researcher, LUT University • Anne-Laure Mention, Professor, RMIT University • Duy Dang-Pham, Dr., RMIT University, Vietnam • Industry Partner: Kempower
Group of discipline	Industrial Engineering & Management, Decision Making and Technological Strategies

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

Project 1: ***Emerging Technologies and Predictive Analytics for Enhancing Organizational Resilience: Reducing Uncertainty in Strategic Decision-Making***
In this topic Doctoral Candidate is likely to explore how Artificial Intelligence (AI) and Machine Learning (ML) technologies can enhance organizational resilience by addressing the critical challenge of decision-making under uncertainty in mobility sector. Moreover, it requires candidate to explore the integration of predictive analytics and big data to identify and mitigate risks associated with strategic decisions, focusing on their potential to forecast disruptions, optimize resource allocation, and improve adaptability in dynamic business environments. It will provide both theoretical advancements and practical recommendations for leveraging AI-driven technologies to create

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resilient, adaptive organizations prepared for future challenges. Candidate is required to have computational or modelling skills or skills related to optimization, decision making under uncertainty, and forecasting for this topic.
Supervisors: Marko Torkkeli (LUT), Adeel Tariq (LUT), Anne-Laure Mention (RMIT), Duy Dang-Pham (RMIT)
Research Fields: Decision Making, Resilience, Technological Strategies, Reducing Uncertainty, and Regeneration

Project 2: ***Enhancing Resilient Decision-Making through Simulation Tools, Scenario Planning, and Digital Twin Technologies***
This project explores how advanced simulation tools, scenario planning technologies, and digital twin systems can be employed to support resilient decision-making in volatile and uncertain business environments. It focuses on understanding how these technologies can reduce decision-making uncertainty, optimize operational efficiency, and enable organizations to navigate complex systems and potential disruptions effectively. Candidate can explore how these technologies can model future scenarios, forecast risks, and help decision-makers prepare for a range of possible outcomes, ensuring robust strategic planning. They can also analyse how digital twins, by providing real-time digital replicas of physical assets and systems, can simulate complex environments to reduce uncertainty and enhance operational efficiency, particularly in electric mobility industry. Candidate is required to have computational or modelling skills or skills related to optimization, decision making under uncertainty, and forecasting for this topic.
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Project 3: ***Technological Strategies for Enhancing Resilience and Reducing Uncertainty***
In this topic, PhD candidate will explore the intersection of technological strategies and human decision-making in enhancing resilience and reducing uncertainty in supply chain management. With the increasing complexity and volatility of global supply chains, organizations are seeking innovative technological solutions that enable informed decision-making and minimize risks. Candidate will study examines the role of cutting-edge technologies in fostering supply chain resilience and optimizing decision-making processes for electric mobility ecosystems. Moreover, candidate can also focus on identifying and evaluating technological tools and strategies that can enhance resilience in supply chains by reducing uncertainties in decision-making, such as demand fluctuations, supplier disruptions, and logistical challenges. Furthermore, candidate can also analyse the critical role of human decision-makers in the successful adoption, implementation, and effective use of resilient technological strategies. Candidate is required to have computational or modelling skills or skills related to optimization, decision making under uncertainty, and forecasting for this topic. In addition, use of techniques such as structural equation modelling would be an added advantage.

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3. Employment Benefits and Conditions

LUT University offers a 48-month full time work contract (12-month term, extended for 36 months provided that the studies progress satisfactorily). There is a probation period of 6 months 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, and in line with the General collective agreement for Finnish universities, will consist of a **gross annual salary** of est. 32 600 EUR (excl. holiday bonus) with salary increases up to 44 700 EUR as the studies proceed. Of this amount, the estimated first year **net salary*** to be perceived by the researcher is 2 080 EUR per month. However, the definite amount to be received is subject to national tax legislation.

For more information on Finnish taxation visit here https://www.vero.fi/en/individuals/tax-cards-and-tax-returns/tax_card/tax-percentage-calculator/.

**Net salaries can fluctuate in accordance with an individual's personal circumstances (marital status, age, disability, family and dependents, etc. The above indicative net salaries offer an approximation of what a single person in their early 20s could expect to receive in their bank account after taxes.)*

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 LUT University 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
- Occupational health care
- Paid sick leave for a limited period
- Holiday bonus
- 6 weeks paid holiday + Finnish public holidays (all together about 8 weeks).
- Social security coverage

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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.

LUT University

To enrol in a Doctorate program, you must meet the general conditions, namely:

- a relevant Master's degree awarded by a university
- a relevant Master's degree awarded by a university of applied sciences; or
- a relevant applicable study programme abroad which in the awarding country gives eligibility for the corresponding level of higher education.

International degrees:

- The degree has to be an official or recognised degree in its country of origin.
- As a rule, at least four-year education is required including a Master's thesis or corresponding final thesis.
- In all cases the doctoral programme in question considers case by case whether degrees earned abroad provide a sufficient foundation for postgraduate studies at LUT University.
- The precondition for the recognition of European degrees is that the degree is a university degree combination earned in accordance with the Bologna Process principles (3+2 years). The applicant is required to submit information in English (for example a Diploma Supplement) on the scope and the level of the degree/s obtained abroad when applying to LUT.
- If you apply for the right to study for a doctoral degree with an international degree please contact LUT Doctoral School for additional instructions before submitting study right application documents.
- **Economics and Business Administration:** One-year (60 ECTS credits) MBA-degrees do not generally qualify for doctoral studies. Candidates with an MBA-degree and their eligibility to apply will be considered case-by-case.

More information: https://www.lut.fi/en/research/doctoral-school

RMIT University

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

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