Position Description

1. General Information

Name of the position	**Human and AI Agency Collaboration in Designing Transformative Innovations for Healthcare**
Foreseen enrolment date	September 2025
Position is funded by	• COFUND, Marie Skłodowska-Curie Actions (MSCA), Horizon Europe, European Union • Kaunas University of Technology (KTU) • RMIT University
Research Host	Kaunas University of Technology (KTU)
PhD awarding institutions	Kaunas University of Technology (KTU) & RMIT University
Locations	Primary: Kaunas, Lithuania Secondary: Melbourne, Australia
Salary	36,336 EUR annual **gross** salary (incl. paid vacation) (3,028 monthly gross salary) (excluding employer's social contributions)
Supervisors	• Asta Pundziene, Professor, KTU • Vytaute Dlugoborskyte, Associate Professor, KTU • Gillian Vesty, Professor, RMIT University • Rahil Garnavi, Professor, RMIT University
Group of discipline	Management, Innovations, Psychology, Artificial Intelligence

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

Project 1: ***Human and AI Agency Collaboration in Designing Transformative Innovations for Healthcare***
The convergence of human creativity and artificial intelligence (AI) offers unprecedented opportunities to design transformative innovations for healthcare. While AI has demonstrated immense potential in diagnostics, drug discovery, and personalized medicine, its integration with human agency, especially the augmentation of human cognitive capacity in innovation processes, remains underexplored. This PhD research aims to investigate how human and AI agents can collaborate effectively to co-design transformative healthcare innovations, defined as innovations that radically improve health outcomes and reshape health systems. Building on theories of distributed agency, socio-technical systems, and human-AI co-creativity, the study will explore mechanisms, design principles, and ethical frameworks that enable synergistic human-AI partnerships. Methodologically, the project will employ a multi-phase approach: (1) a scoping review of existing human-AI collaborative innovation models in healthcare; (2) qualitative case studies of ongoing human-AI projects (e.g., AI-enabled diagnostics, co-designed health apps); and (3) participatory design experiments involving healthcare professionals, designers, and AI systems. This research addresses urgent needs in digital healthcare transformation by contributing a novel framework for a hybrid human-AI innovation agency. Expected outcomes include design principles for collaborative health innovation, ethical guidelines for human-centered AI development, and policy recommendations for responsible innovation ecosystems. By fostering equitable and explainable AI-human partnerships, the study aims to ensure that future healthcare innovations are not only technologically advanced but also human-centered, socially responsive, and democratically governed.
Supervisors: Asta Pundziene (KTU), Vytaute Dlugoborskyte (KTU), Gillian Vesty (RMIT), Rahil Garnavi (RMIT)

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

Research Fields: Artificial Intelligence, Human-Machine Interaction, Innovation

Project 2: Redesigning Healthcare Provider Institution to Effectuate HMIx for Value-Based Healthcare

The integration of intelligent human–machine interaction (HMIx) into healthcare systems holds transformative potential for operational efficiency, clinical decision-making, and patient outcomes. However, the realization of this potential requires not only the development of advanced technologies but also the institutional redesign of healthcare provider organizations to embed HMIx within value-based healthcare (VBHC) frameworks. This PhD research aims to investigate how healthcare institutions can be structurally and culturally redesigned to support the adoption and ethical use of HMIx systems in pursuit of value-based outcomes, defined as improved patient health per unit cost. Building on theories of dynamic capabilities, institutional change, and hybrid intelligence, the study conceptualizes HMIx as a dynamic collaboration between human and artificial agents that goes beyond conventional automation, enabling adaptive, explainable, and co-creative decision-making in clinical settings. Through a mixed-methods approach including a systematic literature review, comparative case studies of health systems implementing AI-augmented decision support tools, and design-oriented stakeholder workshops the research seeks to identify organizational capabilities, workflows, and governance models that enable HMIx-driven VBHC. Expected contributions include a redesign framework for healthcare institutions that aligns digital transformation with VBHC principles; institutional guidelines for responsible HMIx deployment; and policy recommendations for health system governance. This research supports the creation of adaptive, equitable, and learning-oriented healthcare systems where human and machine intelligences are synergistically orchestrated to maximize patient value.

Supervisors: Asta Pundziene (KTU), Vytaute Dlugoborskyte (KTU), Gillian Vesty (RMIT), Rahil Garnavi (RMIT)

Research Fields: Dynamic capabilities, Institutional change, governance models, HMIx, value-based healthcare

Project 3: Exploring Digital Phenotyping to Personalize Patient Journey for Value-Based Healthcare

As healthcare systems worldwide transition toward value-based healthcare (VBHC), there is a growing demand for personalized, continuous, and outcome-oriented care delivery. Digital phenotyping, the moment-by-moment quantification of individual behavior and physiology using data from personal digital devices, offers a novel pathway to achieve these goals. This PhD research investigates how digital phenotyping can be systematically leveraged to personalize the patient journey across the continuum of care, thereby improving patient outcomes and optimizing resource use in alignment with VBHC principles. Drawing on frameworks from service innovation, human-centered AI, and learning health systems, the project explores how passive data streams (e.g., smartphone use, mobility patterns, voice, and sleep) can enhance risk stratification, early intervention, and tailored treatment planning. Through a multi-phase methodology: (1) a systematic review of digital phenotyping tools and their clinical validation; (2) qualitative case studies of pilot implementations in mental health, chronic disease, or post-acute care; and (3) a design science research component to co-develop patient journey mapping tools, this research seeks to develop a conceptual and practical framework for integrating digital phenotyping into VBHC models. Expected outcomes include the articulation of design principles for ethical, explainable, and equitable use of digital phenotyping in healthcare delivery; a typology of patient journey archetypes enhanced by passive data insights; and policy recommendations for integrating digital biomarkers into outcome-based reimbursement and care coordination systems. Ultimately, this study aims to contribute to the development of truly person-centered, data-driven, value-based healthcare ecosystems.

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Supervisors: Asta Pundziene (KTU), Vytaute Dlugoborskyte (KTU), Gillian Vesty (RMIT), Rahil Garnavi (RMIT)
Research Fields: Digital phenotyping, personalized patient journey, value-based healthcare

3. Employment Benefits and Conditions

Kaunas University of Technology (KTU) offers a 48-month full-time work contract. The total working hours per week are 40.

The remuneration, in line with the European Commission rules for Marie Skłodowska-Curie grant holders, will consist of a **gross annual salary** of yearly 36,336 EUR per year (which is of monthly 3,028 EUR). Of this amount, the **estimated net salary** to be perceived by the Researcher is 1,832 EUR per month. However, the definite amount to be received by the Researcher is subject to national tax legislation.

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 KTU 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
- 20 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.

Kaunas University of Technology (KTU)

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

- The requirements for enrolling in a doctoral program are listed here: https://admissions.ktu.edu/phd/#aplication-for-the-admission

More information: https://admissions.ktu.edu/phd/#dates-and-deadlines-to-doctoral-studies-coordinated-by-the-KTU

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RMIT University

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

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