2023 BIS / NZWRI SEMINAR

MONDAY 24 APRIL | 11:00 – 12:00 | WF204/TEAMS

MONDAY, 24 APRIL 2023

WF204, WF Building
AUT City Campus, 42 Wakefield Street
Auckland 1010

Or Teams – Click here to join the meeting
Meeting ID: 483 039 244 632
Password: HVa3C5

PRESENTER:
Niloofar Katiraee

A new methodological approach for considering workers' diversity in assembly system design (by taking into account the European MAIA project)

Abstract:

Companies and production systems worldwide are faced with growing diversity amongst workers. In general, humans differ from each other in terms of characteristics, such as age, gender, skills and physical attributes, and not considering these differences may have a substantial impact on system performances. This issue can be more considerable in environments in which tasks are performed primarily by workers, such as assembly systems, whose performance depends more on workers than on machines. Therefore, there is a strong need to apply a human-centred approach to the design and management of industrial operation systems. This vision is also emphasised by Industry 5.0, which pays explicit attention to system workers toward the design of more human-friendly, human-centric and sustainable manufacturing environments.

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This presentation investigates workers' diversity in production systems to understand how differences among workers affect production systems, with a particular focus on assembly systems. After an extensive literature analysis, new approaches and optimisations are proposed to integrate workers' differences into assembly systems. Distinctively, a combination of worker features was considered with the objective of analysing the effectiveness of considering workers in assembly systems (in both design and rebalancing phases) and improving workers' involvement in job assessments, promoting an inclusive culture in workplaces. This research work identifies important relations between workers' differences and assembly system performance. The outcome of this research can be instructive for production system managers and practitioners whether deciding on investments in the design phase or in workforce management. This seminar is jointly hosted by the AUT Department of Business Information Systems and the NZ Work Research Institute.

Presenter Bio:

Niloofar Katiraee is a post-doctoral researcher at the Department of Management and Engineering of University of Padova since October 2022. At the end of September 2022, she submitted the final dissertation, and she obtained the admission for the final defense of the Ph.D. in Mechatronics and Product Innovation Engineering, Logistics, and Industrial Systems curricula, on December 16th, 2022. During her Ph.D., she has mainly worked on workers' diversity in production systems design, with particular attention on assembly systems to identify the effect of workers and their differences on overall production system performance. During her research, different optimization models plus the methodological framework have been developed to involve workers in job assessment by introducing a subjective assessment tool and using a quantitative measurement tool. Her research is also connected to the European MAIA project to help workers, particularly ageing, in workplaces.

Starting from the first year of her Ph.D., she teaches in post-high school diploma courses (ITS Mechatronics and ITS LAST) and teaches anyLogistix software in Material Flow Systems master course at the University of Padova.