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# Bachelor's Thesis

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## Ageing/handicapped workforces in Industry 5.0 scenarios: How can eye tracking technology help?

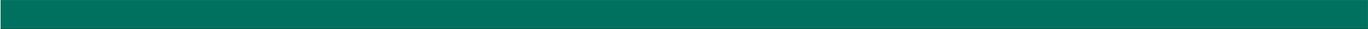
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### Background

The European Commission's Joint Employment Report 2017 highlights that in 2016, the employment rate for older workers (55-64) is expected to be 55.3%, while the employment rate for people aged 15-64 is forecasted to be 66.6% (Eurofound, 2021a). The share of older workers will increase further in the future due to low birth rates and an increasing average retirement age (Calzavara et al., 2020). In addition to this, despite recent progress, labor market participation remains a challenge for people with disabilities (Eurofound, 2021b). Based on this background, some critical questions are put forward. For example, what is the current state of the ageing and disabled workforces' involvement in manufacturing systems? Can technology or digital innovation help them access the manufacturing processes? How can technology help an ageing or disabled workforce in the Industry 5.0 context? A promising solution could be to utilize the interactive capability of eye-tracking for human task assistance. The interplay between eye-tracking and other assistive technologies can open up new channels for ageing or disabled workforces to improve their health condition, both physically and mentally.

### Objective

The objective of this thesis is to investigate how eye tracking can be used to help an ageing or disabled workforce in manufacturing works. To achieve the described objective, a systematic literature review should be applied as the main research method. It is expected to investigate state-of-the-art policies and scientific works on ageing and disabled workforces in the manufacturing context. Then it is encouraged to make an exploration of the interactive use of eye-tracking as well as other assistive technologies that have the potential to



improve the involvement of ageing and disabled workforces in manufacturing environments. Finally, a discussion should be formalized to gain insights and derive recommendations for practice.

## References

Calzavara, M., Battini, D., Bogataj, D., Sgarbossa, F. and Zennaro, I. (2020), “Ageing workforce management in manufacturing systems: state of the art and future research agenda”, *International Journal of Production Research*, Taylor & Francis, Vol. 58 No. 3, pp. 729–747.

Duchowski, A. T., & Duchowski, A. T. (2017). *Eye tracking methodology: Theory and practice*. Springer.

Eurofound. (2021a), “Ageing workforce”, European Foundation for the Improvement of Living and Working Conditions, available at: <https://www.eurofound.europa.eu/topic/ageing-workforce> (accessed 11 October 2021).

Eurofound. (2021b), *Disability and Labour Market Integration: Policy Trends and Support in EU Member States*, Luxembourg, available at: <https://doi.org/10.2806/143896>.

## Supervisor

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## Language

English