



## Nursing AI: Technology-Related Nursing Competencies and Psychological Factors of Human-Technology Interaction in Nursing Profession

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Advanced technology, such as robotic care systems and artificial intelligence, brings novel and effective solutions to the world of healthcare, but also new challenges, which need to be addressed timely. As Alan Turing said, "We can only see a short distance ahead, but we can see plenty there that needs to be done." In the light of these developments, Nursing AI, as an interdisciplinary international project, aims at studying and facilitating the development of technology-related nursing competences. Based on nursing informatics frameworks (Hubner et al., 2016, Mantas & Hasman, 2017, Nagle et al., 2017) and the Unified Theory of Acceptance and Use of Technology (Venkatesh et al., 2003), the authors developed measurement instruments and interventions aiming at empowering nurses in their interaction with advanced technology. At the conference, the authors will present their work in progress, including the intervention design and the data collection, which is conducted among nursing professionals in three national contexts (three hospitals and nursing schools in Germany, Hungary and Netherlands), with a minimal sample size of 200 participants per country. Multilevel linear mixed modeling and multilevel structural equation modeling will be used to test the hypotheses of the study (e.g., the significant positive relationship between behavioural intention to use the technology and affinity for technology interaction (Franke, Attig, & Wessel, 2019), and significant negative relationship between the behavioural intention and work identity rigidity (Berkers, 2018)). Machine learning algorithms will be applied to the data to find interactions between domain-specific factors (e.g. nursing experience, nursing concepts, interprofessional collaboration) and psychological factors related to human-technology interaction in nursing profession, such as affinity for technology interaction. Based on the results of machine learning approach, new testable hypotheses for further research will be formulated. Thus, the study will be useful in our attempts to understand, which competencies are needed by nurses to deal with technology, how these technology-related competencies can be developed and measured, and which psychological factors influence their development in nursing profession.

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- Venkatesh, Morris, Davis, & Davis. (2003). *User Acceptance of Information Technology: Toward a Unified View*. *MIS Quarterly*, 27(3), 425.