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**Ph.D. School in Electronics, Computer Science and Electrical Engineering
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SEMINAR

BALANCING THEORY AND PRACTICE IN DEVELOPING DESIGN GUIDANCE FOR MOBILE HEALTH APPLICATIONS TARGETING HABIT FORMATION

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March 19, 2024 – 10:00-11:00 - Aula seminari verde DIII

Abstract: Numerous mobile applications on the marketplace aim to promote health behaviour change for users, and while they are promising, we continue to see variations in their effectiveness. A prospective solution is to turn to psychology theories to help guide systems design. This research draws from habit theory for guidance on designing mobile health applications that can support users form health-related behaviours as habits. We discuss how we move habit theory into the design domain, validate it, and then derive eight design principles from it. Specifically, we offer a method to derive, refine, and validate the design principles, referred to as a reusability check, and apply it within this research. As part of the reusability check, we asked 14 systems design students to each apply the design principles in a wireframe of the mobile application and answer questions about the actionability and insightfulness of the principles afterwards. We also share examples of how these design principles can be operationalized in a mobile app that promotes daily stretching as a habit. The research outputs can guide decision-making during systems design, enhance credibility, and assess solutions for efficacy and safety in various contexts for mobile health applications aiming to promote health behaviour change for users.

Bio: Dr. Alexander Chung is an assistant professor in the Department of Organizational Information Systems of the Faculty of Administrative Sciences. He holds a Ph.D. in Management with a specialization in health systems at the Telfer School of Management, a Master of Systems Science from the University of Ottawa and a Bachelor of Biology from Carleton University. His research uses the research paradigm of design science and focuses on the design of information systems in health and environmental sustainability. Currently, he is examining how information systems can be used to change the behavior of users to help them adopt new habits. Before his academic career, he worked at the Department of National Defence in the Assistant Deputy Minister (Data, Innovation and Analytics) division. In addition, Alexander is interested in fisheries management and has participated in several projects with the government and the private industry on the management of Canadian fisheries and coastal areas.

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