Bastian Ilsø Hougaard

I research Human-Computer Interaction (HCI) in game-like experiences using novel media technologies, such as eye-tracking, brain-computer interfaces (BCI) and virtual reality (VR) for stroke rehabilitation.

Over the past 5 years I have contributed to research in healthcare technology, data visualization, storytelling and gamification.

Academic Background

2013 - 2016 (3 years)
BSc. Medialogy
Aalborg University

2016 - 2018 (2 years)
MSc. Medialogy: Interaction
Aalborg University

2017 (½ year)
Occupational Trainee
University of Queensland (Ref: Stephen Viller)

2018 - 2019 (½ year)
Classical Drawing Course
The Drawing Academy Classical, Design and Applied Arts

2019 - 2021 (2½ years)
Research Assistant (HCI)
HMI Lab, Aalborg University (Ref: Hendrik Knoche)

2021 - 2025 (4 years)
PhD Fellow
HMI Lab, Aalborg University (Ref: Hendrik Knoche)

Age	30
Skills	HCI Research UX Design Programming Data Visualization
Code	C#, R Shiny, Python, Javascript, Arduino, PHP, HTML, CSS, Git
UX	Wireframing Concept Modeling Motion Graphics Ethnography Storytelling Game Design Onboarding
Media	Virtual Reality Audio/Video BCI Tablet/Mobile Eye-tracking

Teaching Background

Teaching Assistant (2018-2023)
At the AAU Courses:
Data Visualization
Real-time Interfaces and Interactions
Game Research & Development

Guest Lecturer (2022-2024)
At the AAU courses:
Teori og praksis i Game Design og -Udvikling (2023)
Advanceret Menneske-Maskine Interaktion (2023)

Project Supervision (2019-2024)
AAU: BSc and MSc Medialogy

User Needs Workshop Lecturer (2020)
AAU Course: Problem-based Learning

Publications

This list highlights publications in which I am main author. For a full list, please visit my orcid profile: https://orcid.org/0000-0002-6861-1858

2024
Conference Paper

Aiming, Pointing, Steering: A Core Task Analysis Framework for Gameplay

B. I. Hougaard & H. Knoche
CHI PLAY '24: Proceedings of the Annual Symposium on Computer-Human Interaction in Play
https://doi.org/10.1145/3677057

2022
Journal Article

Modulating Frustration and Agency using Fabricated Input for Motor Imagery BCIs in Stroke Rehabilitation

B. I. Hougaard, H. Knoche, M. S. Kristensen, & M. Jochumsen
IEEE Access, 1–1. https://doi.org/10.1145/3547522.3547723

2022
Abstract

Whack-A-Mole VR: Demonstration of Accessible Virtual Reality Game Design for Stroke Rehabilitation

B.I. Hougaard, H. Knoche, I. Brunner, L. Evald
Adjunct Proceedings of the 2022 Nordic Human-Computer Interaction Conference, 1–2.
https://doi.org/10.1145/3547522.3547723

2022
Poster

Virtual Motor Spaces: Exploring how to amplify movements in VR stroke rehabilitation to aid patients with upper limb hemiparesis

B. I. Hougaard, M. M. Skovfoged, L. Evald, I. Brunner, & H Knoche
ICVR2022 Papers, 21–22. https://doi.org/10.1145/3547522.3547723

2022
Abstract

Virtual Mirror Therapy in a VR Pointing Task for Stroke Rehabilitation

B.I. Hougaard, L. Evald, I. Brunner, H. Knoche
European Stroke Journal, 546–588. https://doi.org/10.1177/23969873221094907

2021
Journal Article

Spatial Neglect Midline Diagnostics From Virtual Reality and Eye Tracking in a Free-Viewing Environment

B.I. Hougaard, H. Knoche, J. Jensen, L. Evald
Frontiers in Psychology, 12, 5226. https://doi.org/10.3389/fpsyg.2021.742445

2021
Conference Paper

Who willed it? Decreasing Frustration by Manipulating Perceived Control through Fabricated Input for Stroke Rehabilitation BCI Games

B. I.Hougaard, I. G. Rossau, J. J. Czapla, M. A. Miko, R. B. Skammelsen, H. Knoche & M.Jochumsen
Proceedings of the ACM on Human-Computer Interaction, 5(CHI PLAY), 235:1-235:19.
https://doi.org/10.1145/3474662

2021
Conference Paper

Pandemic as Game Mechanic: Simulation of Infection Spread for the Classroom.

B. I. Hougaard, H. Knoche, & M. Grünfeld
2021 International Conference on Advanced Learning Technologies (ICALT), 231–233.
https://doi.org/10.1109/ICALT52272.2021.00075

2020
Conference Paper

Stars, Crests and Medals: Visual Badge Design Framework to Gamify and Certify Online Learning

B. I. Hougaard, & H. Knoche
In A. Brooks & E. I. Brooks (Eds.), Interactivity, Game Creation, Design, Learning, and Innovation (pp. 406–414). Springer International Publishing. https://doi.org/10.1007/978-3-030-53294-9_29

2019
Conference Paper

Telling the Story Right: How Therapists Aid Stroke Patients Interpret Personal Visualized Game Performance Data

B. I. Hougaard, & H. Knoche
Proceedings of the 13th EAI International Conference on Pervasive Computing Technologies for Healthcare, 435–443. https://doi.org/10.1145/3329189.3329239

2017
Journal Article

How annotated visualizations in self-care technology supported a stroke survivor in goal setting and reflection.

B. I. Hougaard, & H. Knoche
EAI Endorsed Transactions on Serious Games, 4(12).
http://dx.doi.org/10.4108/eai.8-12-2017.153400