DRIES CARDINAELS

Ph.D. Researcher ~ Freelancer

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SUMMARY

Exploring immersive VR technologies for intuitive and precise control in telerobotics, enhancing usability and accessibility in human-robot interaction. Our research focuses on innovative VR interaction methods, aiming to simplify complex tasks and expand telerobotic applications across industries.

EDUCATION

9/2021 - 7/2023 **Master's Degree in Computer Science (Magna Cum Laude)** — **Hasselt University**
Thesis: Studying and Analyzing Implementations and Techniques in a Telerobotic Environment
Prof. Dr. Kris Luyten & Prof. Dr. Frank van Reeth

9/2018 - 7/2021 **Bachelor's Degree in Computer Science (Cum Laude)** — **Hasselt University**
Thesis: Serious Game to Educate Heart Patients
Prof. Dr. Gustavo Rovelo Ruiz

RESEARCH EXPERIENCE

11/2023 - Present **Ph.D. Human-Robot Interaction** — **Hasselt University**
Thesis: Augmenting Human Capabilities to Perform Complex Tasks Through Telerobotics
(Advisor) Prof. Dr. Kris Luyten & (Co-Advisor) Prof. Dr. Raf Ramakers

9/2023 - 11/2023 **Researcher** — **Hasselt University**
Expertise Centre for Digital Media, Diepenbeek, Belgium

TEACHING EXPERIENCE

2/2024 - Present **Project Software Ontwikkeling en Professionele Vaardigheden** **2252**

2/2024 - Present **Tools and Technologies for Interactive System Development** **2184**

9/2023 - 1/2024 **Computer Architecture** **4863**

9/2023 - 1/2024 **Object Oriented Programming II** **4183**

9/2023 - 1/2024 **Computational Fabrication** **4169/4719**

THESIS ADVISING

2/2024 - Present **Bachelor Thesis on Collaborative Robots** — **Computer Science**
We explore the use of collaborative robots, acting as extra 'hands' to assist in tasks requiring precision, such as soldering or detailed modeling

2/2024 - Present **Bachelor Thesis on Precise Delta Robot Manufacturing** — **Industrial Engineering**
Developing a prismatic delta robot focused on the precise synchronization of three linear actuators, aiming for significant accuracy improvements for industrial applications

PUBLICATIONS

March 2024 **D. Cardinaels**, B. van Deurzen, R. Ramakers, & K. Luyten, AntHand: Interaction techniques for precise telerobotic control using scaled objects in virtual environments, in Human-Robot Interaction 2024, Late Breaking Reports

March 2024 B. van Deurzen, **D. Cardinaels**, G. Rovelo Ruiz, & K. Luyten, A VR prototype for one-dimensional movement visualizations for robotic arms, in The 7th International Workshop on Virtual, Augmented, and Mixed-Reality for Human-Robot Interactions

PRESENTATIONS

March 2024 **Poster Presentation** — **HRI '24**
ACM/IEEE International Conference on Human-Robot Interaction, Boulder (CO), USA

LANGUAGES

Dutch - Native, **English** - B2, **Italian** - A1