



GOVERNMENT
OF MALTA



Co-funded by
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EDUWEAR - Engineering Educational Competence Development on Customisable Wearable Rehabilitation Devices



Newsletter

August, 2025

Issue

#02



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Introduction

► In this second edition of the **EDUWEAR** newsletter, we dive into the exciting three-day summer training event hosted at the University of Oulu's Center for Ubiquitous Computing (UBICOMP). Students from the University of Malta, University of Pisa, University of Strathclyde, and University of Oulu gathered to take part in an immersive experience combining digital fabrication, hands-on experimentation, and collaborative design.

The EDUWEAR Summer Course, held in a FabLab environment, represents a cornerstone of the project's objectives by immersing students in a truly hands-on, interdisciplinary learning journey. Throughout the three days, participants were challenged to apply engineering principles, while also engaging in ergonomic testing and 3D scanning practices.

By combining design thinking and iterative prototyping, the program emphasised both technical and human-centred aspects of wearable device development for rehabilitation. Students not only gained practical experience through outcome presentations, expert feedback, and team-based problem solving but also had their competences evaluated against the previously identified knowledge gaps from surveys and focus groups.

This integration of real-world prototyping and competence evaluation ensures the course directly contributes to shaping a robust curriculum for the next generation of engineers focusing on rehabilitation technology.



Newsletter #2



The Consortium

The EDUWEAR project brings together a strong alliance of academic excellence:

Core Partners



University of Malta – Leading the project with expertise in engineering education and rehabilitation-focused innovation.



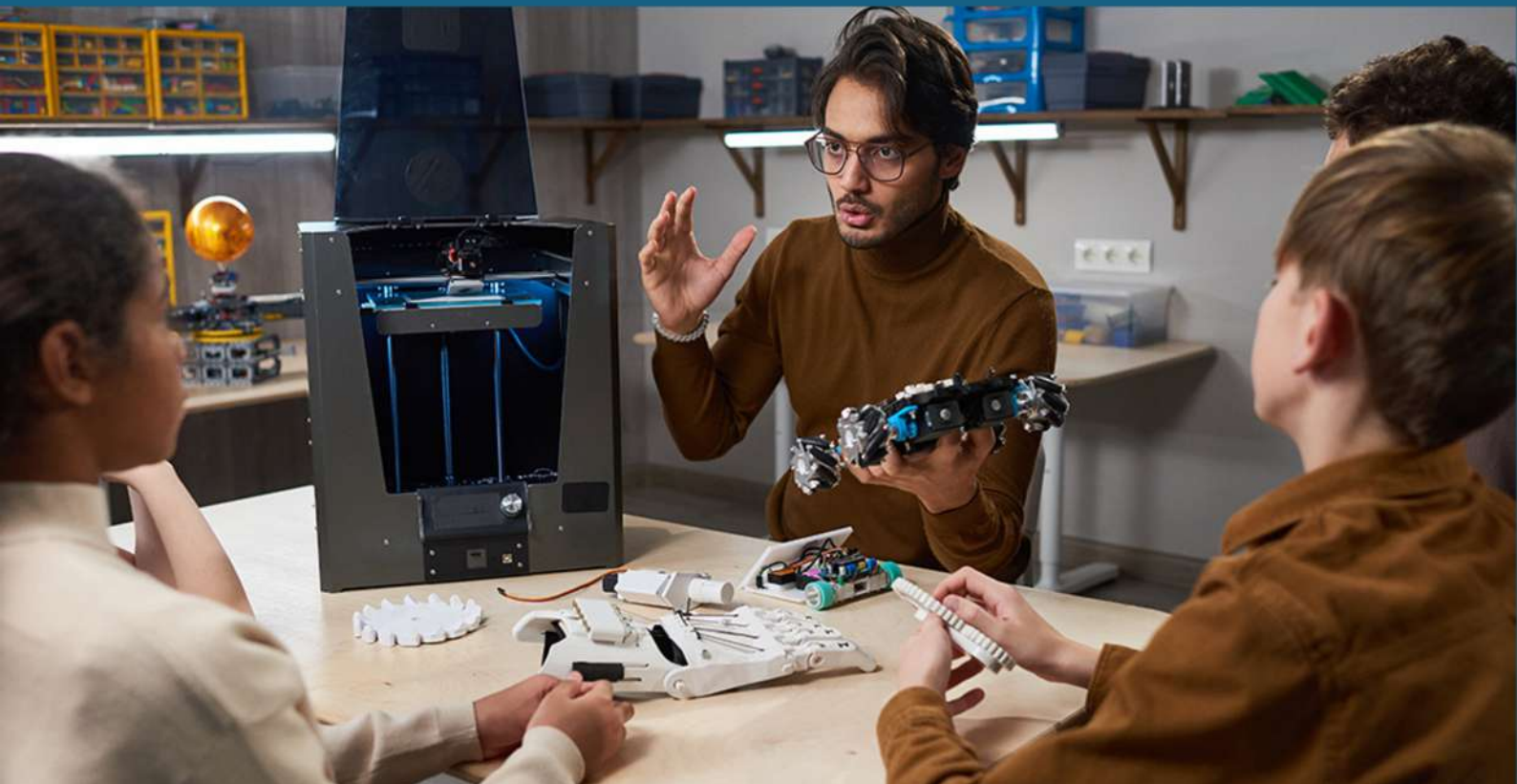
UNIVERSITÀ DI PISA

University of Pisa – Contributing in-depth knowledge in biomedical and industrial engineering.



UNIVERSITY OF OULU

University of Oulu – A pioneer in digital fabrication and wearable technologies, fostering hands-on learning.



The EDUWEAR project is further strengthened by the expertise and collaboration of our associate partners:

Associated Partners

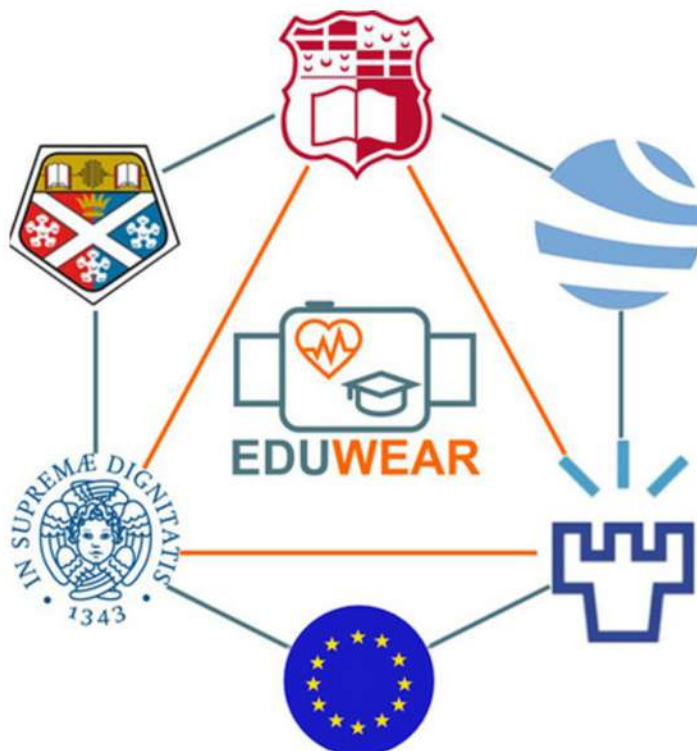


University of Strathclyde – Specialising in advanced technology and engineering education, supporting project innovation.

Nicomed - A leader in the healthcare and rehabilitation field, bringing invaluable industry insights and practical applications.



Make sure to subscribe to our mailing list – future newsletters will dive deeper into the expertise of each partner and team member!



Day 1

Getting Oriented – From Safety to Inspiration 4th June, 2025

🔵 The training opened with a warm welcome and orientation by the UBICOMP team, giving students a clear roadmap of what to expect across the three days.

Participants were introduced to the Fab Lab's facilities, tools, and safety procedures, gaining a better understanding of the digital fabrication environment they would be working in. From 3D printers to electronics workstations, students got a full tour and learned how each piece of equipment would support the development of their smart wearable devices.

“Starting in the Fab Lab was a great way to break the ice – seeing the equipment made the project feel real from the beginning.”

Engineering
Student

On Day 1, participants were divided into four multidisciplinary teams, each carefully composed of students and experts from diverse backgrounds, including mechanical, electrical, and software engineering, as well as occupational therapy. This team structure was designed to foster cross-disciplinary collaboration from the outset. The day also provided an important opportunity for students from the different partner universities to get to know one another, share their academic and professional backgrounds, and begin building a strong foundation for teamwork throughout the training.







Day 2

Learning by Doing – Scanning, Printing & Designing 5th June, 2025

🔵 The second day focused on building foundational skills in digital fabrication and design:

3D Scanning Workshop

Students practiced using 3D scanners on various objects, eventually scanning their own hands — an essential step in designing a smart wearable device that fits comfortably and accurately tracks motion.



CAD Modelling & 3D Printing

Teams were introduced to digital modelling and slicing software, learning how to design and print components for custom wearable devices. The sessions emphasised ergonomics and personalisation.



Group Brainstorming

Students were then divided into the four teams and were challenged to design a smart wearable device for the hand using what they had learned. Each group began mapping out concepts, identifying user needs, and sketching ideas to support motion tracking and rehabilitation exercises.



“This was my first time working hands-on with 3D scanning and printing. I feel much more confident to turn my ideas into real prototypes.”

Occupational
Therapist



Day 3

Programming, Testing & Presenting Prototypes 6th June, 2025

🔵 The final day was dedicated to coding, evaluation, and reflection:

In the morning, participants learned how to program the Raspberry Pi Pico and integrate a 9DoF IMU sensor, allowing the wearable ring to detect and monitor phalange movement.

Students also received a session on testing methodologies for wearable rehabilitation devices and were tasked with developing a testing strategy plan for their group project.

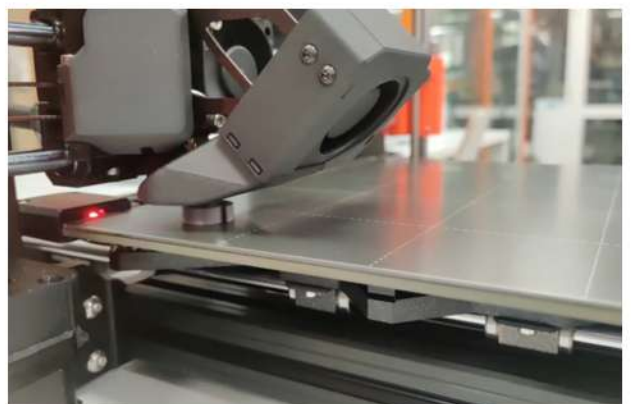
In the afternoon, each team continue to work on their task and finally they presented their prototype wearable ring. The presentations covered:

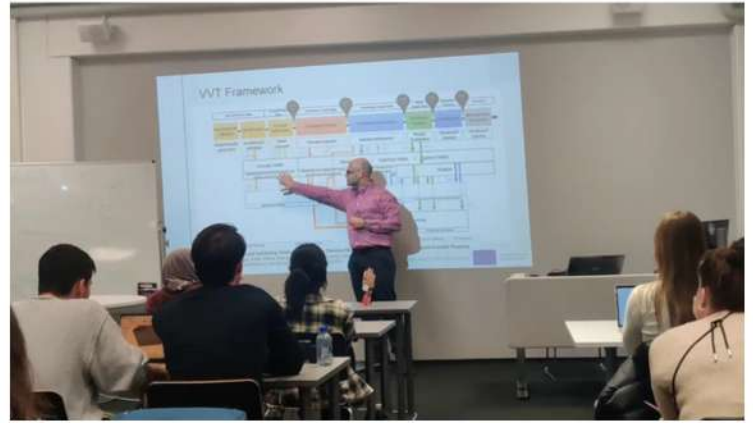
- Development journey
- Technical processes used
- Challenges faced and solutions attempted
- Results from low-fidelity testing
- Reflections and improvement ideas for future iterations

The creativity and problem-solving demonstrated during these presentations highlighted the success of the EDUWEAR hands-on learning model and the participants' ability to work across disciplines.

"Testing helped us see the good and the bad of our design. It gave us a chance to iterate toward better outcomes."

Engineering Student

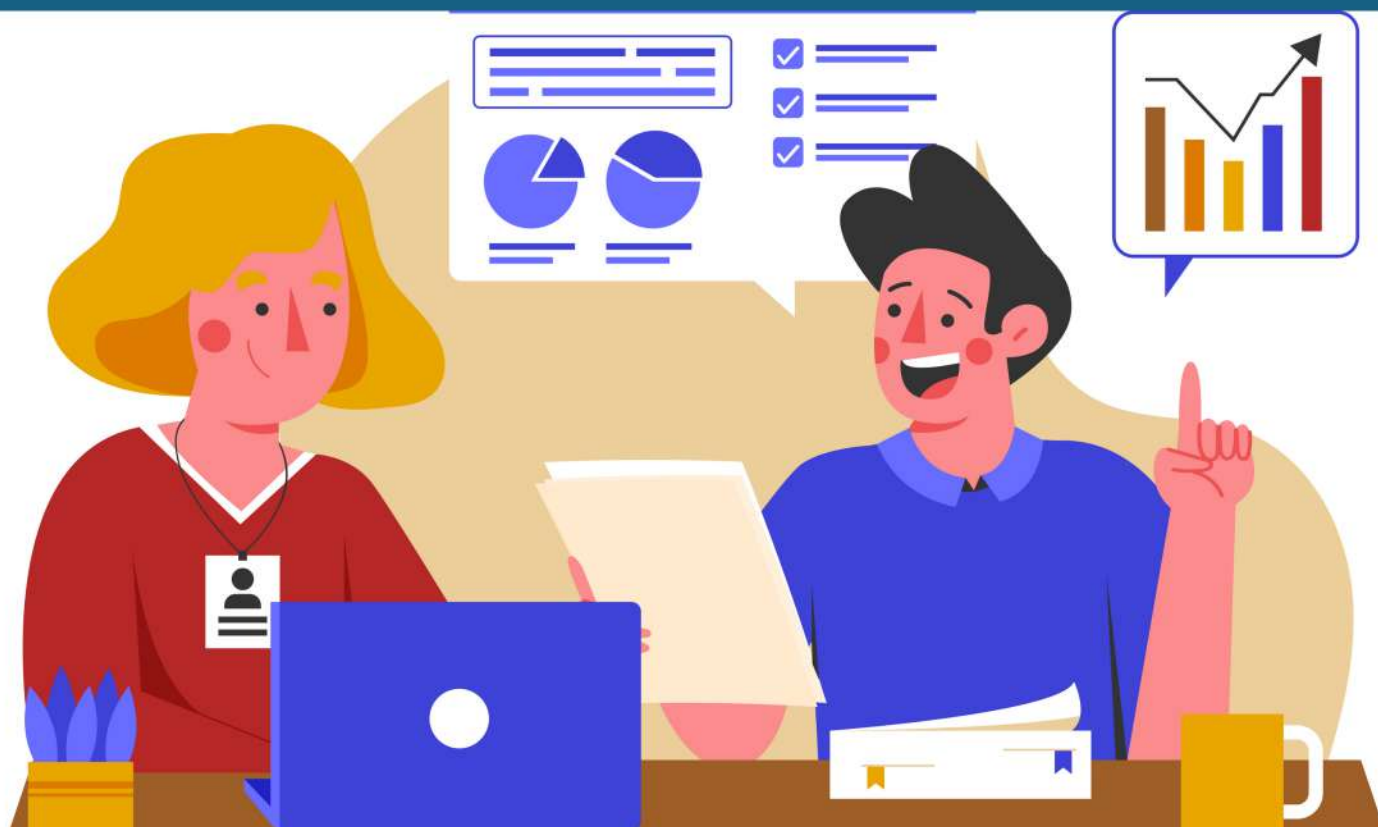




What's next in EDUWEAR?

The outcomes of the Oulu summer training will feed directly into the development of the EDUWEAR blended curriculum, combining online learning with hands-on modules. Feedback collected from students will also be used to enhance the next training cycle and refine the tools and methodologies introduced.

Stay tuned for updates on our curriculum development progress, stakeholder workshops, and upcoming international events.



Stay Connected

SOCIAL UNITY

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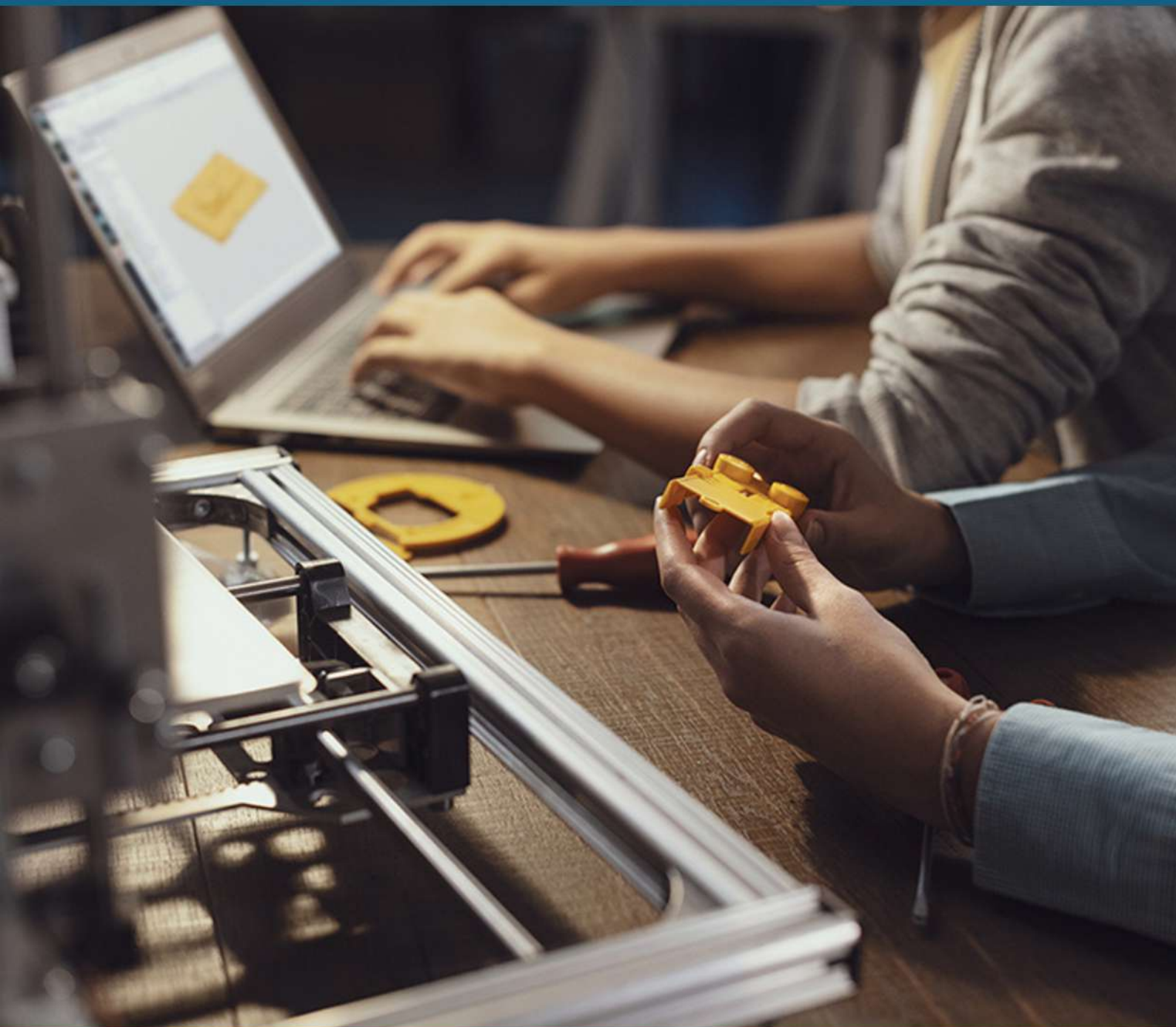
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