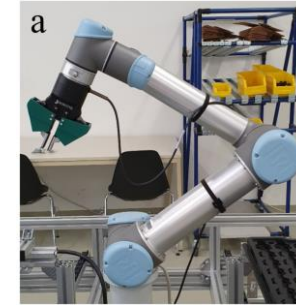


DeCoTe: Democratizing Cobot Technology

Sebastian Schlund (TU Wien), sebastian.schlund@tuwien.ac.at

Why to care about Cobots?

- Cobots have the potential to improve each workplace in terms of ergonomics and productivity.
- Therefore, they have to become tools that everybody is able to use...
- ... intuitively.
- (In a safe and secure way.)



Universal Robot
UR5
Usability score
(SUS): 55%



Fanuc CR-7iA
Usability score
(SUS): 52%



Franka Emika
PANDA
Usability score
(SUS): 71%

SCHMIDBAUER, C., KOMENDA, T., & SCHLUND, S. (2020). TEACHING COBOTS IN LEARNING FACTORIES—USER AND USABILITY-DRIVEN IMPLICATIONS. PROCEEDIA MANUFACTURING, 45, 398-404.

Expectations vs. Shop-floor Reality

Cobot use in Austrian Industry

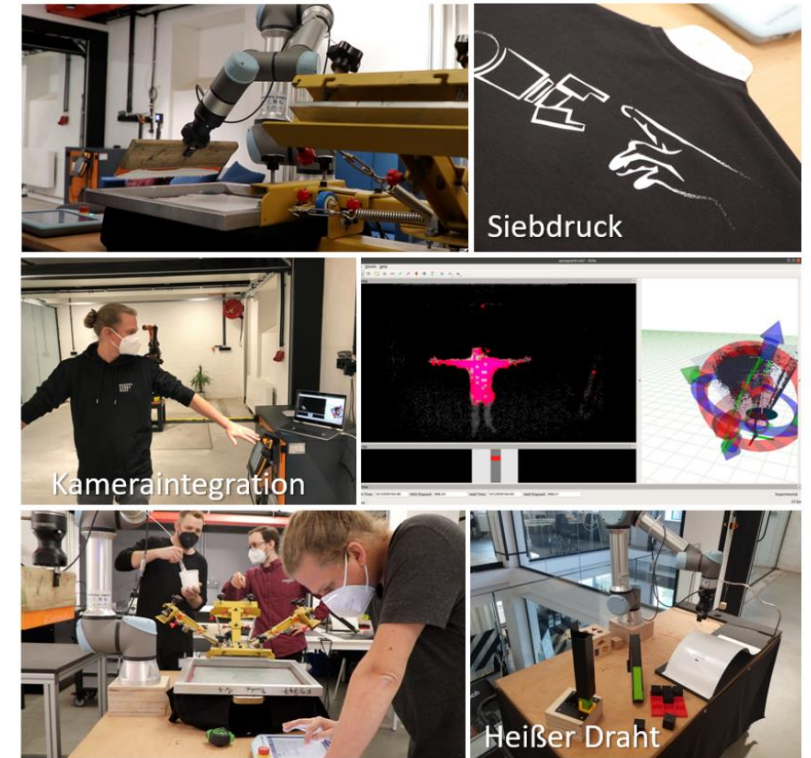
- Use of Cobots (n=84)
 - Company-wide: 0%
 - Partially: 30%
 - Pilot areas: 11%
 - Application planned: 15%
 - No application: 44%
- Main Challenges (n=77)
 - Costs/RoI 30%
 - Task Allocation 27%
 - Safety 21%
 - Employer Acceptance 13%
 - Other 9%

PATSCH, J., KAMES, D., MAYRHOFFER, W., & SCHLUND, S. (2021). MADE IN AUSTRIA: PRODUKTIONSARBEIT IN ÖSTERREICH 2021.



Democratizing Cobot Technology

- Democratization: “non-discriminating access to the design, development and use of technology”
- Somehow important as cobots are supposed to be used in very close interaction with people.
- Today’s underlying paradigms set high access barriers in terms of prior knowledge and experience and limit/restrict potential use cases.
- Background: Austrian research project (FFG, grant no 871459) CoMeMak (Cobots meet Makerspace) with TU Wien, Joanneum Research, RIC, Grand Garage



Democratizing Cobot Technology



1. Intro Webinar

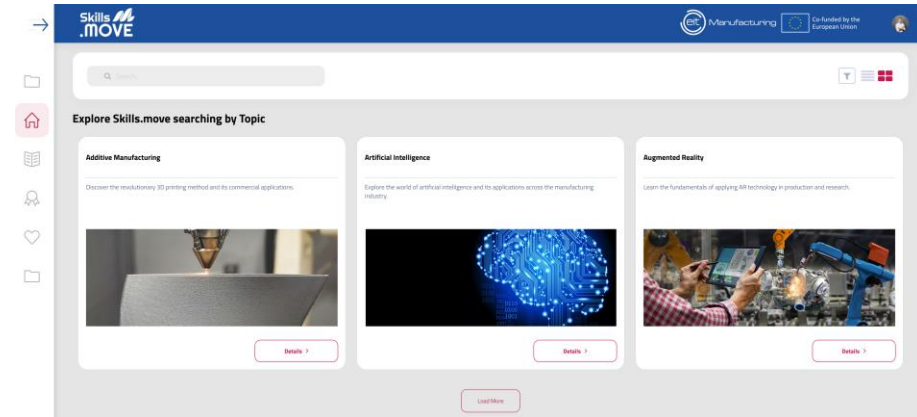
- Meet and Greet with all Participants | Training Plan | Introduction to DeCoTe & Manufacturing of the Future | Skills.move Registration | How to Prepare for Practical Part?

2. E-Learning on Skills.move

- Introduction to DeCoTe
- Introduction to Cobots
- Safety Instruction
- Safety Instruction Quiz
- Introduction to Universal Robots
- Introduction to Universal Robots Programming
- Questionnaire for Certification

3. Practical Part

- Universal Robots Use Case
- Cobot Case Study "Machine Tending"
- Programming with Assembly (Part 1-4)
- Universal Robots Simulator Palletizing
- Nuggets & Discussion



Start (Local Time)	Team Bex	Team Ameca	Team Unimate	Team DaVinci	Team Atlas
10:00	Welcome				
10:15	UR Use Case	Cobot Case Study "Machine Tending"		Programming with Assembly	
10:55	UR Simulator Palletizing	UR Use Case	UR Simulator Palletizing	Cobot Case Study "Machine Tending"	
11:40	Cobot Case Study "Machine Tending"	Discussion & Nuggets	UR Use Case	UR Simulator Palletizing	
12:25	Lunch break				
13:00	Discussion & Nuggets	Programming with Assembly		UR Use Case	Discussion & Nuggets
13:45	Programming with Assembly	UR Simulator Palletizing	Discussion & Nuggets		UR Use Case
14:30	Coffee break & Informal Feedback Round				
14:40	Questionnaire & Certification				
15:00	End				

Democratizing Cobot Technology 2021



Mihaela Lekic • 2.
Researching AI in Medicine

12 Min. ...

Thank you for the wonderful workshop and for emphasizing that knowledge of seemingly complex fields like robotics can *and should* be democratized towards wider audiences to foster inclusion, understanding and innovation.

[Übersetzung anzeigen](#)

Gefällt mir | Antworten



Democratizing Cobot Technology 2022



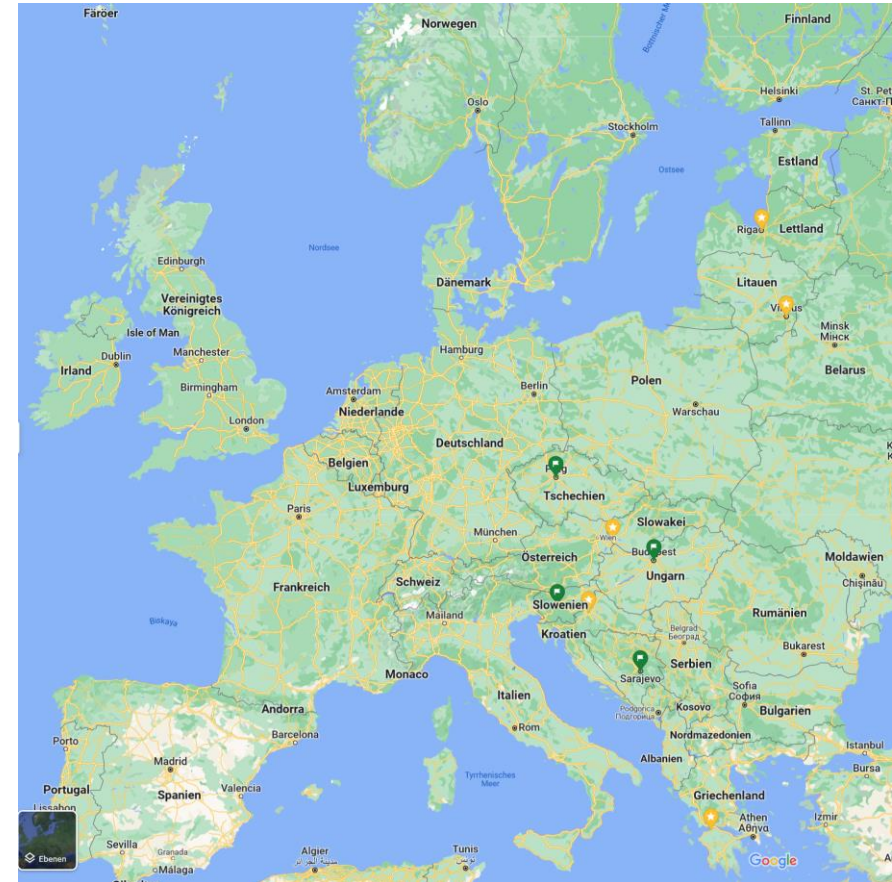
Prolongation via EIT Manufacturing CLC East and TU Wien

Upcoming Dates:

- Sarajevo Oct 07/08
- Ljubljana Oct 17/18

Planned:

- Prague (tba)
- Bratislava (tba)
- Hungary (tbd)
- Austria (tbd)



EIT Open Day

Austria & Slovakia

23 September 2022 | Vienna, Austria



Thank you for your attention!

