SZÉCHENYI 2020

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Infrastructure and expertise for successful Robotics 4.0 pilot projects in food Industry

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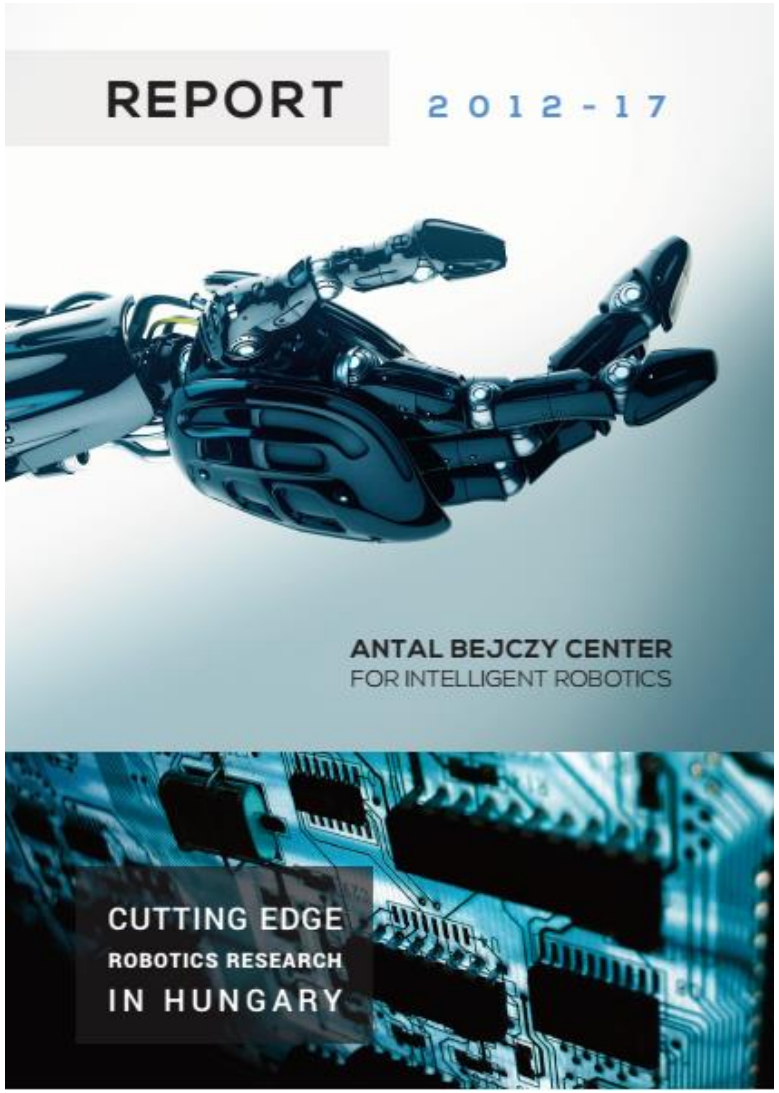
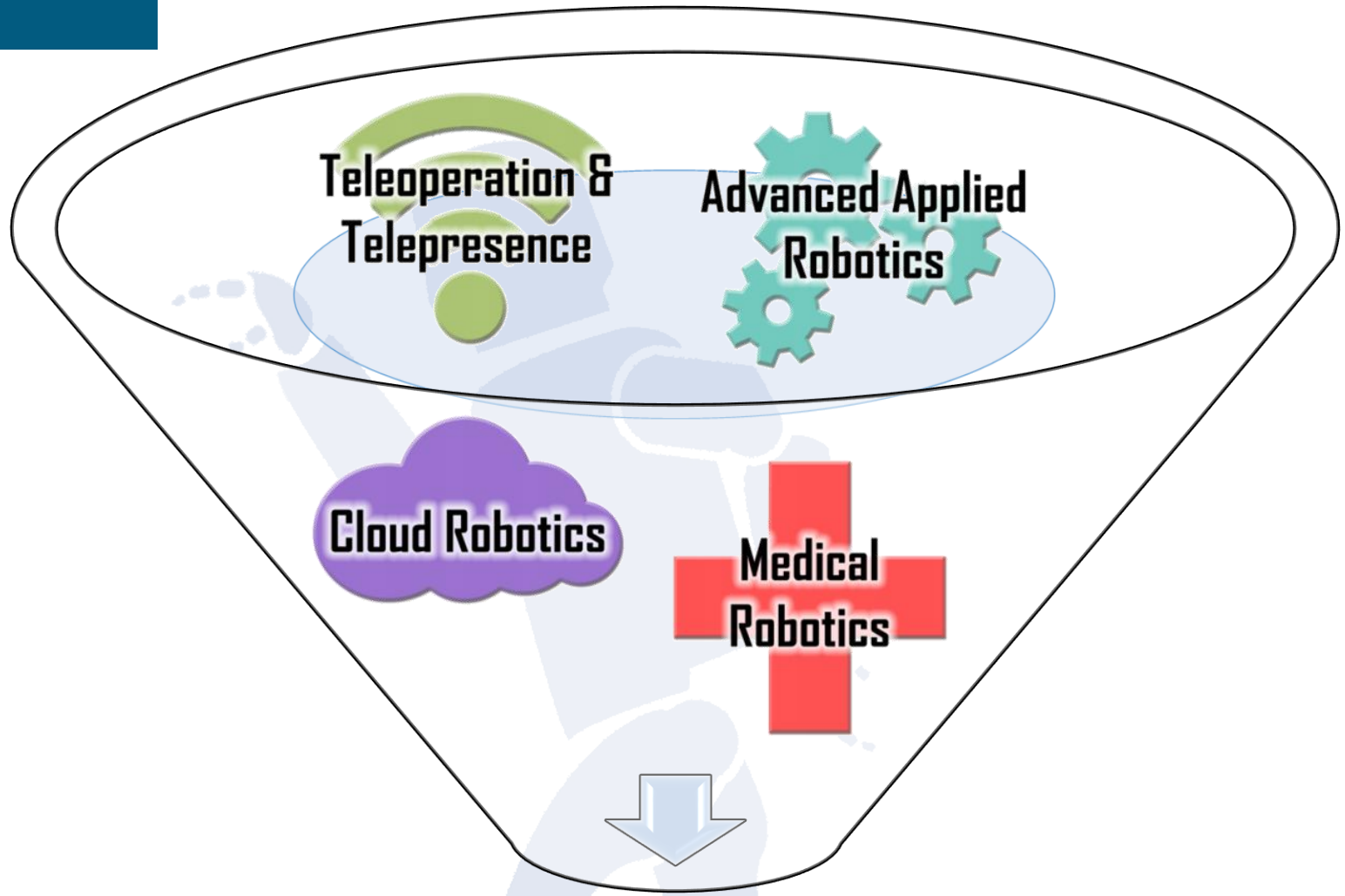
Óbuda University - iROB



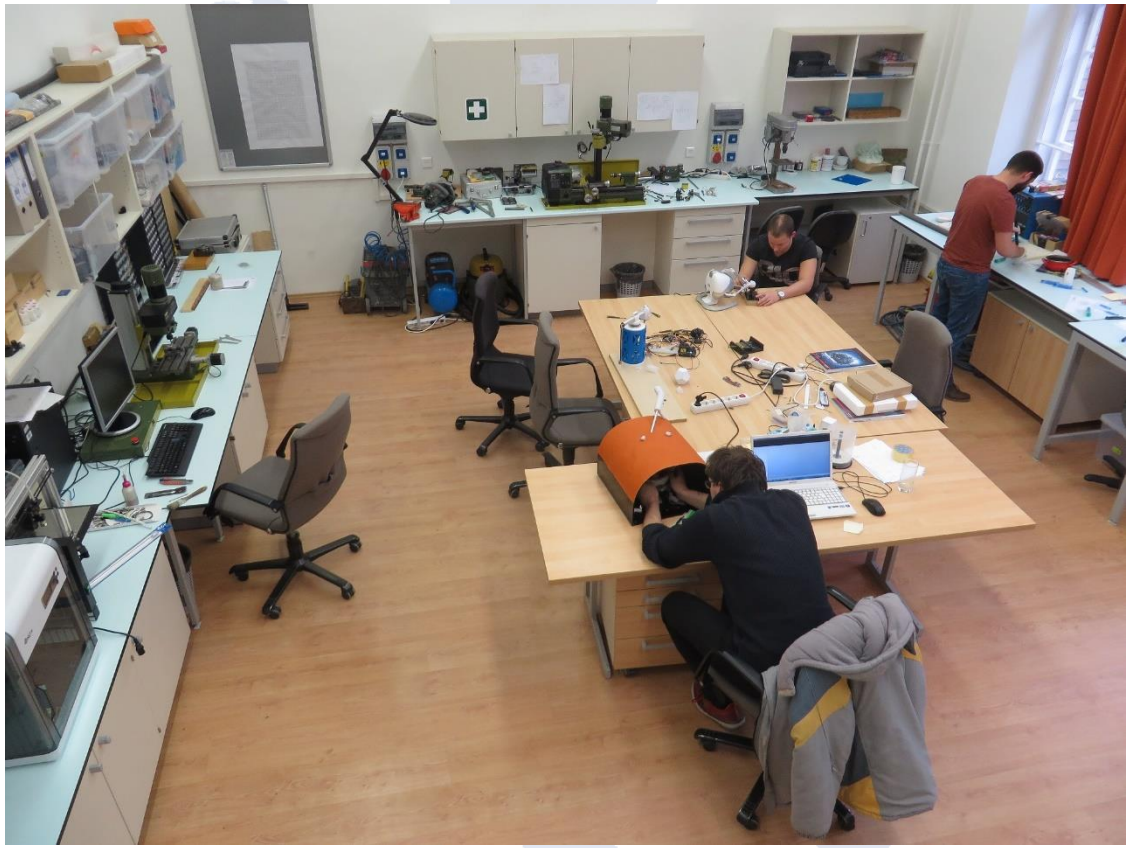


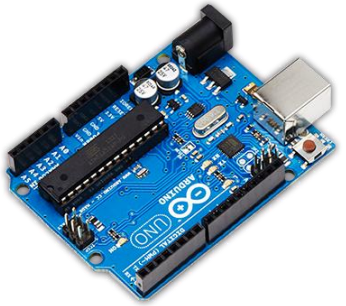
Industrial and Medical Cyber Physical Systems

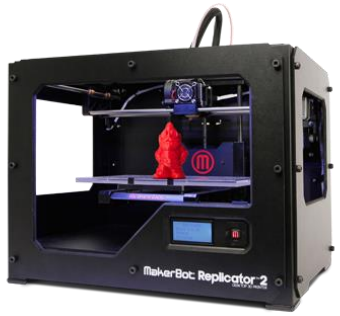

sokoldalúsággal vezérelve
FANUC

Prototyping workshop @ iROB

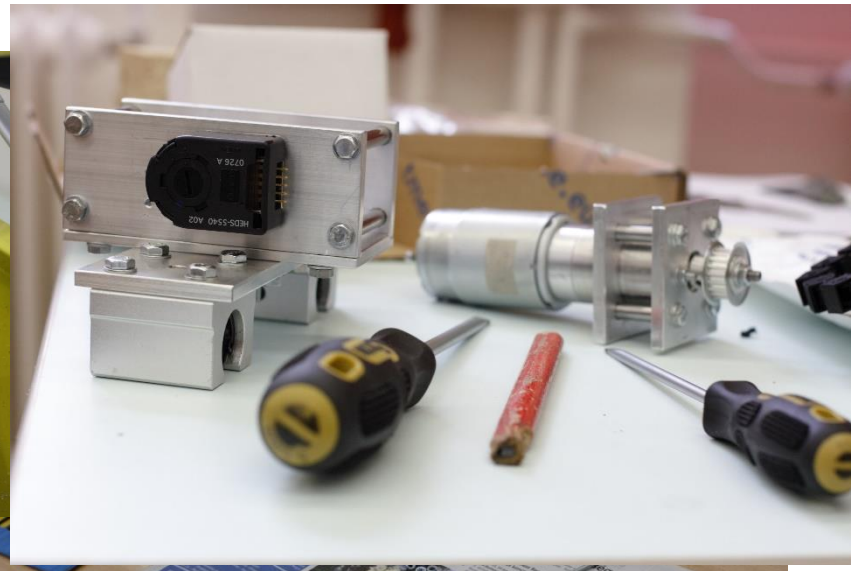
- Great inventory of **tools and equipments**
- Metal cutting
- 3D printing
- Plastic molding
- Electronics prototyping
- Full engineering support

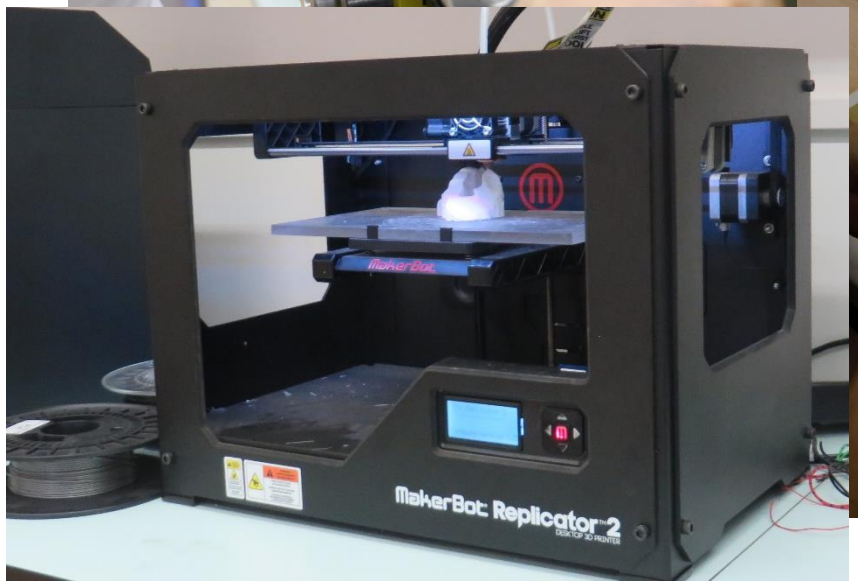






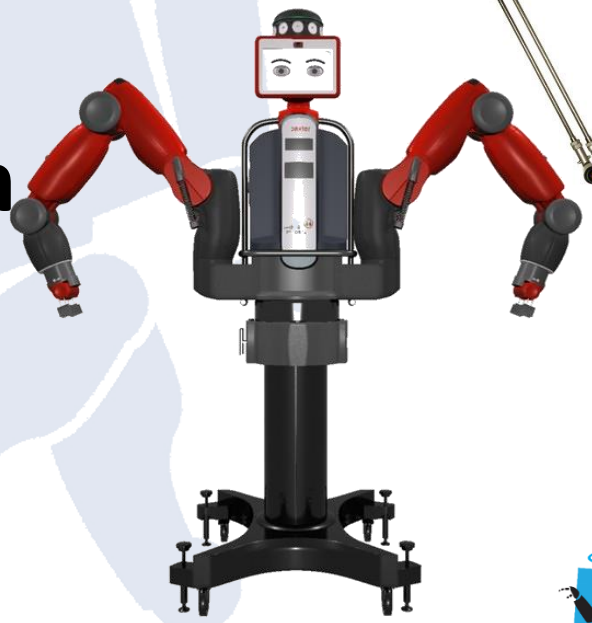
Prototyping workshop @ iROB





Evolution of Robots

- **1960 – 1980** Early adoption
- **1980 – 1990** Going mainstream
- **1990 – 2010** Faster, Stronger, Smarter
- **2012 – Mobility, Collaboration, Cognition**



Cobotics

Pros and Cons

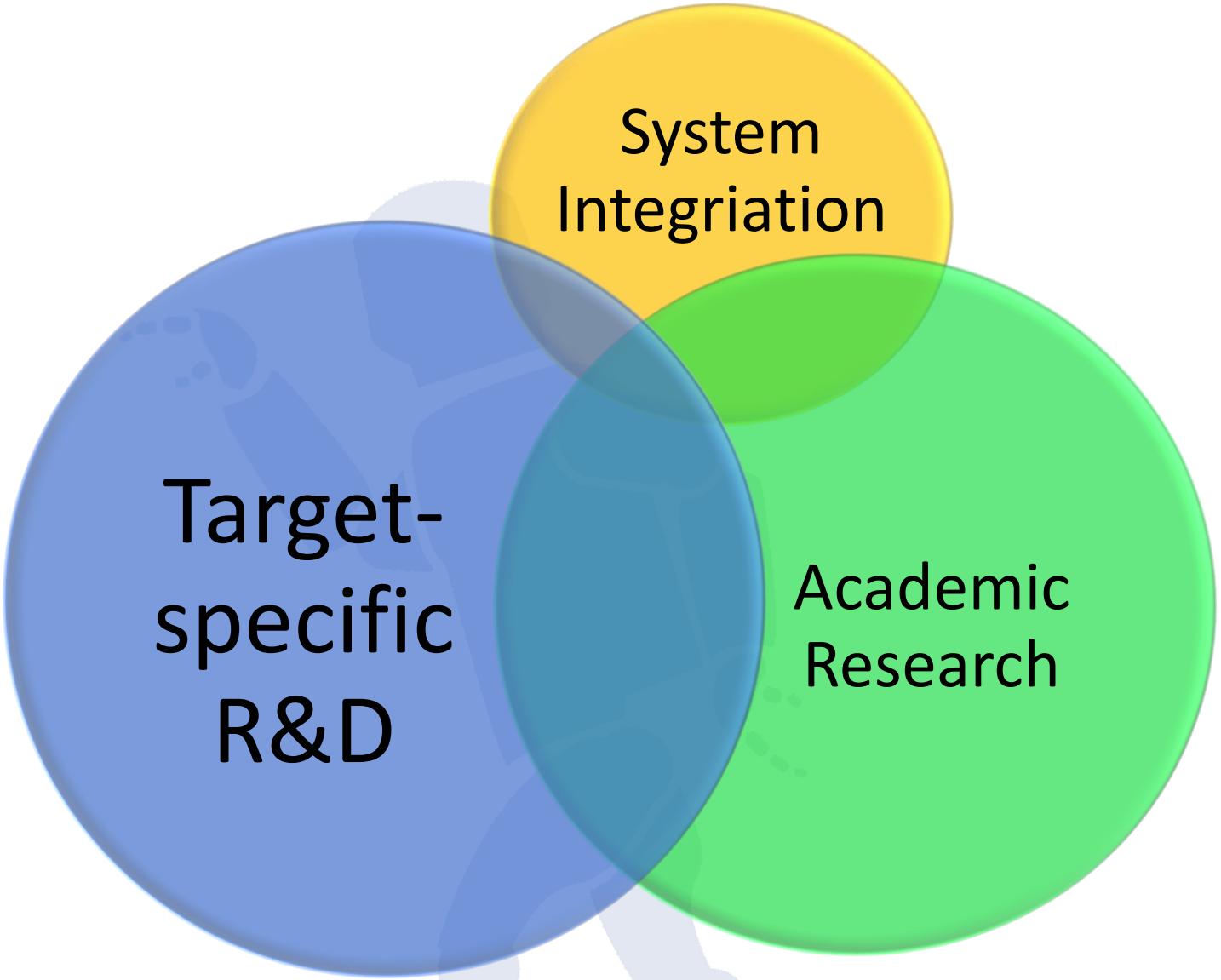
Pros	Cons
Good ROI (~ 1 year in some cases)	**Expensive** safety devices (Laser scanners)
Fenceless operation	Still **insufficient cognitive capabilities**
Combine **robot strength** with **human intelligence**	Collaborative scenarios are tipically **slow**
Increase productivity with the same human staff	Typically **limited payload**
Better **reusability**	**Non-deterministic** operation
Easier programming (e.g., direct teach-in)	Increasingly **exposed to „sabotage”**

The value challenge in Cobotics

- Conventional or collaborative?
- What is the proper level of collaborativeness?
- What sort of robot should be chosen?
- How many robots can do the job?
- What kind of sensors needed? (3D scanners, cameras, force sensors, etc.)

Our business

- 6+ Dedicated research engineers
- Run min. 2 parallel Industrial projects
- Prototype manufacturing workshop in place
- Agile cycles
- Universal, FANUC, KUKA expertise
- Integration of I4.0 features (IoT, Big Data, Deep Learning, etc.)



Look ahead: What comes?

Mobile + limb

Deep learning

Superhuman sensing

Application example – Force-based interaction

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