Topics: Practical Course – Building a Modular Robot

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Connecting an Endeffector (2 people)

What to do
• Researching most common grippers and their connectors
• Development of adapters to connect various endeffectors mechanically and electronically
• Production of an adapter for Schunk-grippers
• Integrating the gripper into the existing environment

Methods
• CAD
• 3D-Printing
• Implementation on Linux/Raspberry Pi
Mechanical Coupling Mechanism (2 people)

What to do
• Researching existing coupling mechanisms
• Developing different approaches
• Producing a stiff and reliable coupling mechanism
• Evaluating coupling mechanism

Methods
• CAD
• Prototyping/3D-Printing
• Analysis
Robot Control Panel (2 people)

What to do
• Develop an intuitive GUI to control the modular robot
• Iterative paper prototypes (partly based on previous work)
• Frontend implementation

Methods
• Requirements analysis, user analysis, task analysis
• Ideation and iterative paper prototyping
• Implementation on Linux
• UX evaluation and optimization (usability testing, expert interviews, user questionnaires)
• UI style guides
Application

Please send your CV, transcript of records and short motivation to roman.hoelzl@tum.de