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# Intuitive Instruction of Industrial Robots



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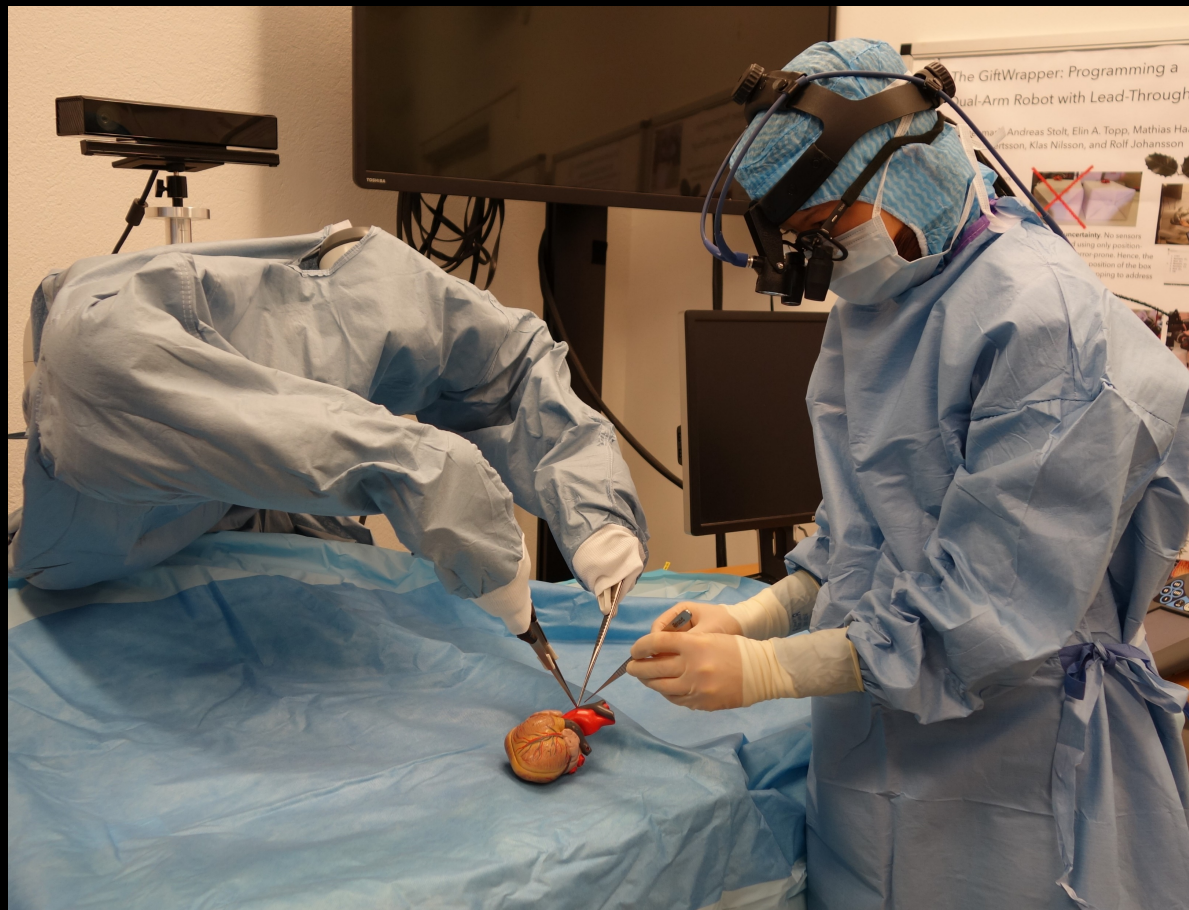
## Our customers:

- First timers
- Want frequent and rapid repurposing





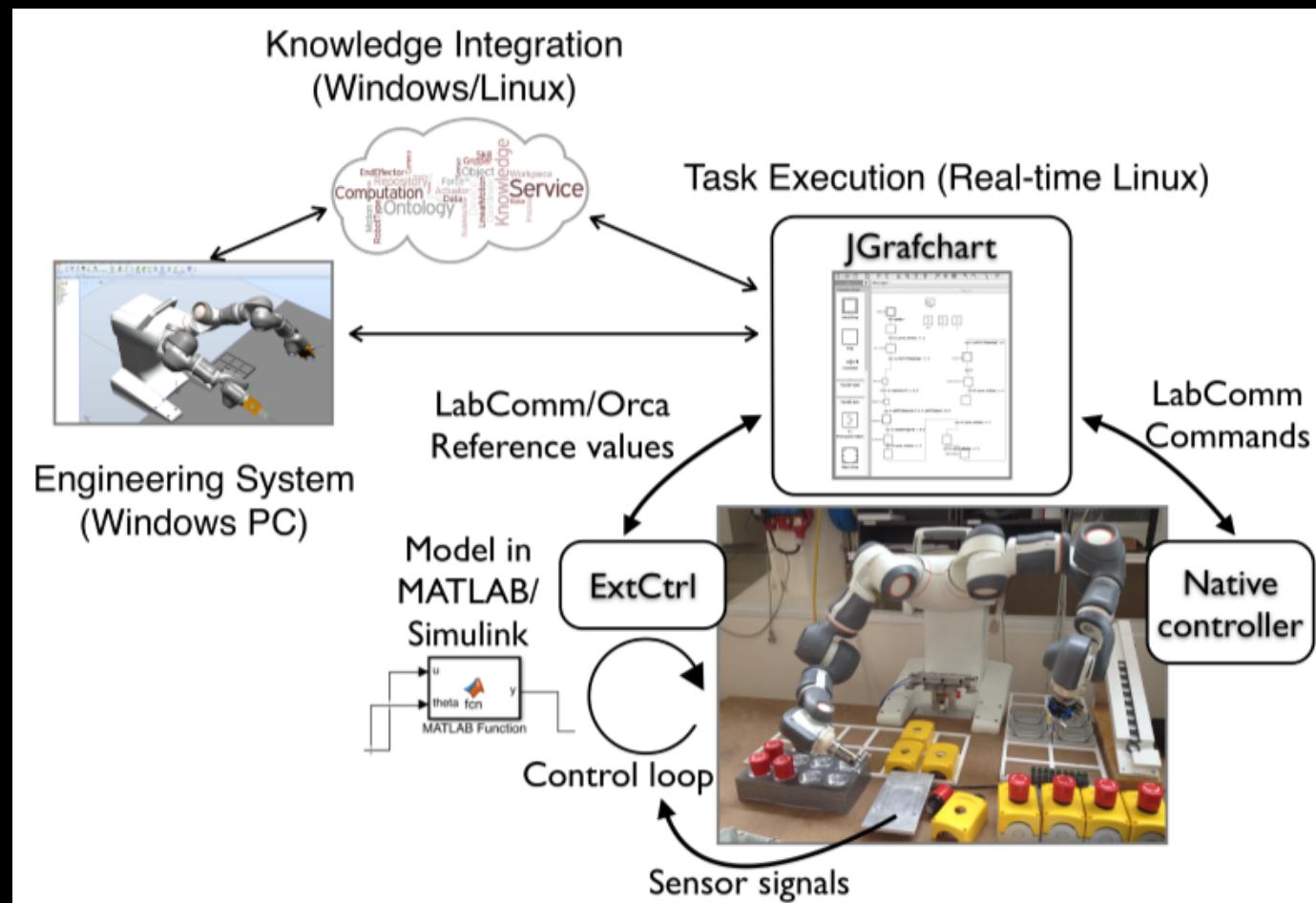
# “Can it sew?”





# Previous work

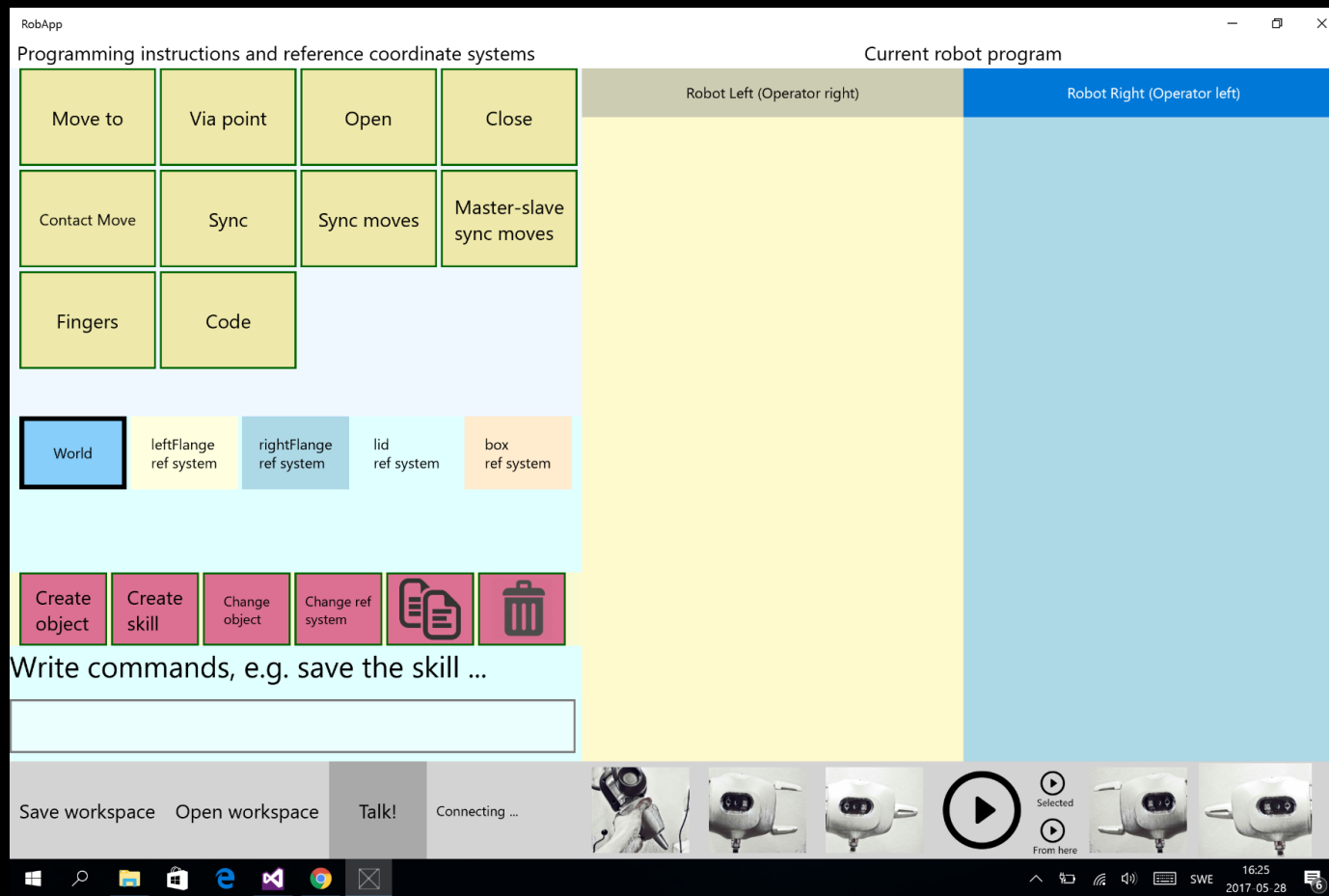
- Reusable skills!
- Skill acquisition bottleneck





# Our approach

- Bottom-up
- Primitives
- Simple testing and debugging
- Resuable skills
- 80% less time





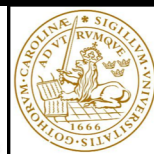
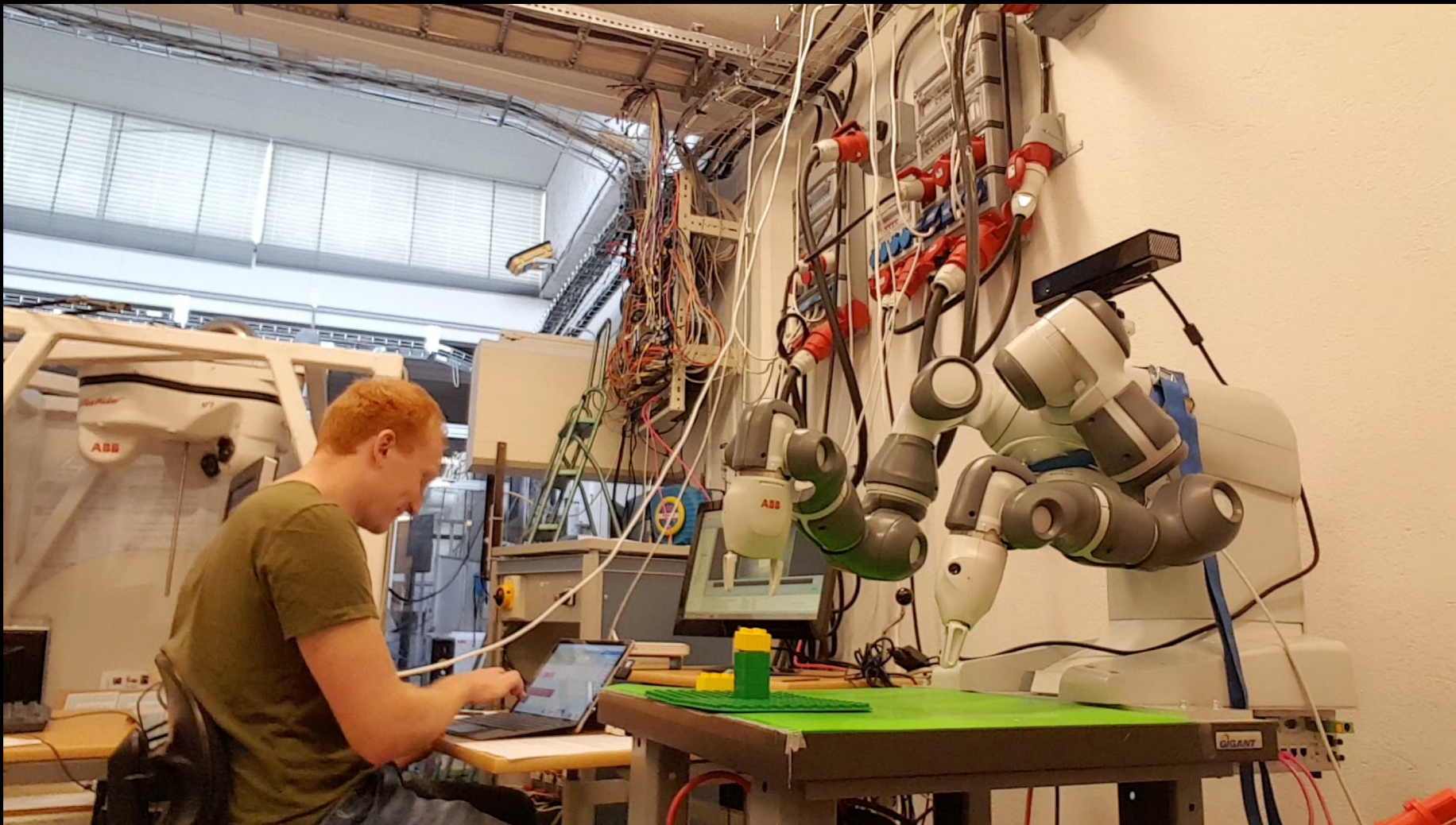
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The screenshot displays the RobApp interface, which is divided into several sections:

- Programming instructions and reference coordinate systems:** A grid of buttons for actions like 'Move to', 'Via point', 'Open', 'Close', 'Contact Move', 'Sync', 'Sync moves', 'Master-slave sync moves', 'Fingers', 'Code', 'MoveLidRight', and 'MoveLidLeft'. Below this is a row of reference systems: 'World', 'leftFlange ref system', 'rightFlange ref system', 'lid ref system', and 'box ref system'. At the bottom of this section are buttons for 'Create object', 'Create skill', 'Change object', 'Change ref system', and a trash icon. A text box below says 'Write commands, e.g. save the skill ...'.
- Current robot program:** A table with two columns: 'Robot Left (Operator right)' and 'Robot Right (Operator left)'. Each column contains a list of program steps with play, refresh, and checkmark icons. The steps include 'Open2', 'ViaMove5', 'Move5', 'Move6', 'Sync1', 'Close2', 'Master1', 'Master2', 'Master3', 'Master5', 'Open4', 'Master6' for the left robot, and 'Open3', 'ViaMove4', 'Move7', 'Move8', 'Sync1', 'Close1', 'Slave1', 'Slave2', 'Slave3', 'Slave4', 'Open5', 'Slave6' for the right robot.
- Bottom bar:** Contains 'Save workspace', 'Open workspace', 'Talk!', and 'Connected' buttons. On the right, there are icons for robot selection and a play button. The system tray at the bottom shows the Windows taskbar with the time 10:18 and date 2017-05-26.







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