

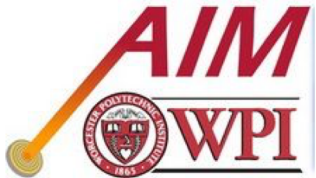
Software Framework for Research in Semi-Autonomous Teleoperation



NRI 1637759

Greg Fischer

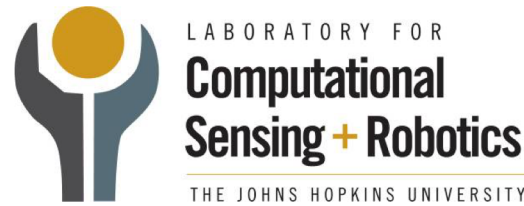
Worcester Polytechnic Institute



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Challenge

- Need for a robust common research platform in medical robotics
- Limited access to hardware platforms in the broader community

Solution

- Leverage da Vinci Research Kit (dVRK) and Raven II platforms
- Broaden participation through realistic simulators
- Develop common software API

Software Framework for Research in Semi-Autonomous Teleoperation



Community Engagement

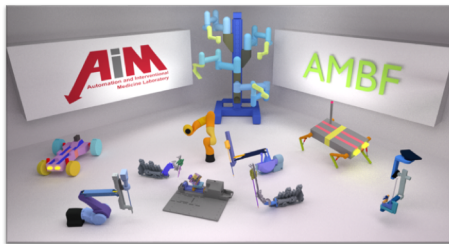
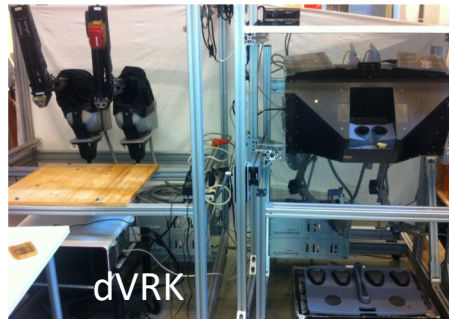
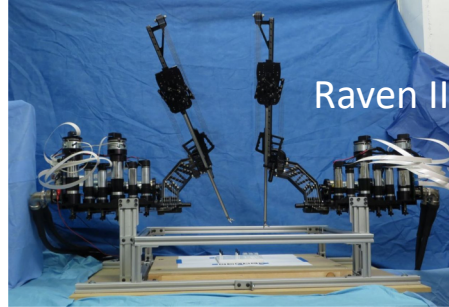


- Workshops/tutorials at IROS 2017, IROS 2018, ICRA 2018, ICRA 2020, ISMR 2019, ISMR 2020
- User group meeting (UBC 2017)

Impact

- dVRK and Raven at more than 50 institutions worldwide
 - More than 500 citations (combined)
- AMBF simulator being adopted

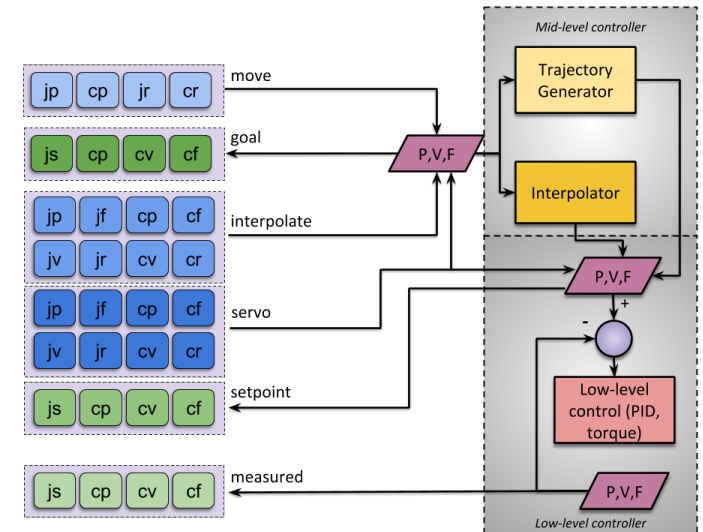
Platforms



Common API

Collaborative Robotics Toolkit (CRTK)

- Addresses medical robotics use cases
- Standardized commands and payloads
- Leverages ROS



<https://github.com/collaborative-robotics>