NSF Award #2024802 "Collaborative Research: NRI: INT: Transparent and Intuitive Teleoperation Interfaces for the Future Nursing Robots and Workers", 2020/09/01-2023/08/31. Funded by **NSF NRI** and **NIOSH**.
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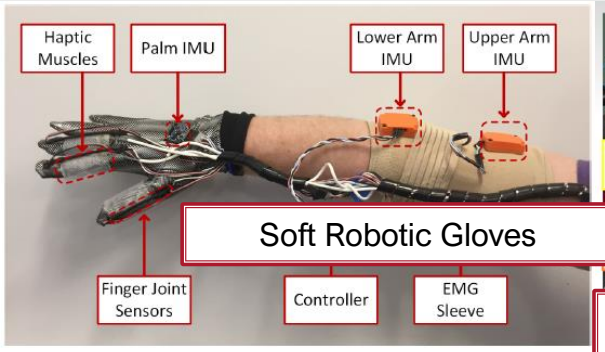
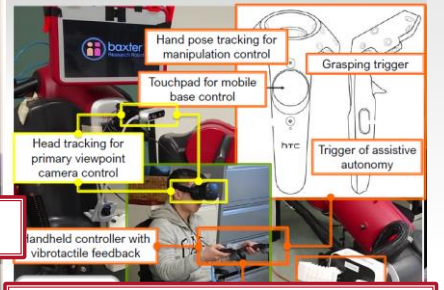
Motivation & Significance

Tele-Nursing Robots for **pandemic response** (Ebola, Zika, COVID-19); Benefit 2.9 million US **registered nurses and nursing practitioners**; Support in-home care, clinics, and hospitals given the **shortage of nursing workers**; Prepare future workers through **fusion of nursing and engineering education**





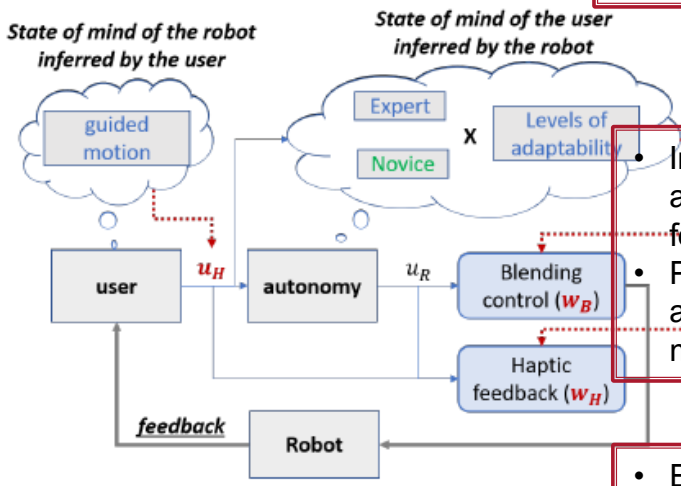
Human-inspired Mapping & Teleoperation Assistance

Theme 1
Soft-robot teleoperation interface with human inspired motion mapping
- Integrative Closed-Loop Haptic Control Architecture
- Human-Inspired Intuitive Motion Mapping and Teleoperation Assistance

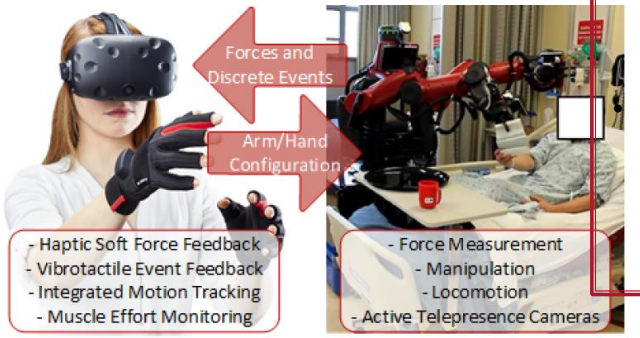
Experimental Platforms and Evaluation
- Integrated Soft Robotic Wearable Haptic Glove
- Tele-Robotic Intelligent Nursing Assistant (TRINA)
- Component Validation and System-Level Usability Evaluation
- Evaluate the Social Impacts of the Proposed Interfaces

Theme 2
Leverage haptic feedback for interactive human-robot training
- Supporting the User to Learn Robot Teleoperation
- Enhancing Robot Learning for Mutual Adaptation

Education and Outreach
- WPI-WSU Collaboration
- Graduate + Undergraduate Education
- TouchTomorrow + Frontiers
- WIRE + FIRST
- NSF NRT Program



- Interactive learning via assist-as-need haptic feedback
- Principled method to achieve human-robot mutual Adaptation



- Evaluate the usability of interface for nursing assistance tasks
- Evaluate the nursing workers' perception and acceptance of interface and nursing robot technologies

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