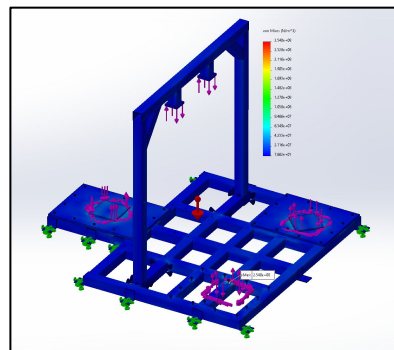
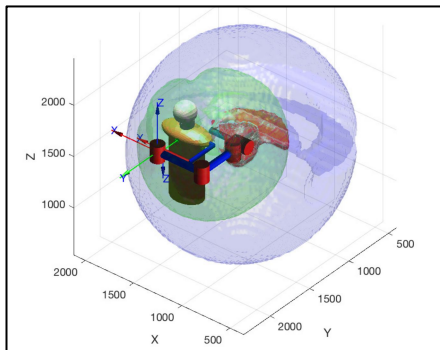
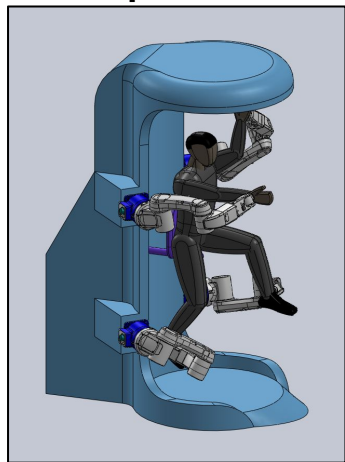


Erik Kramer | Virtual Reality Exoskeleton (V-Rex)

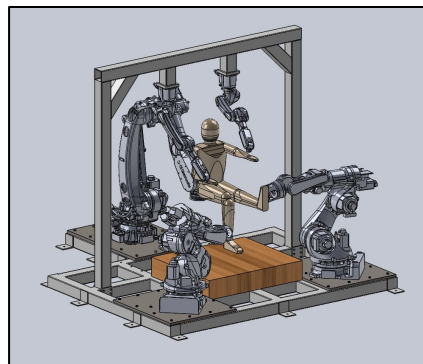
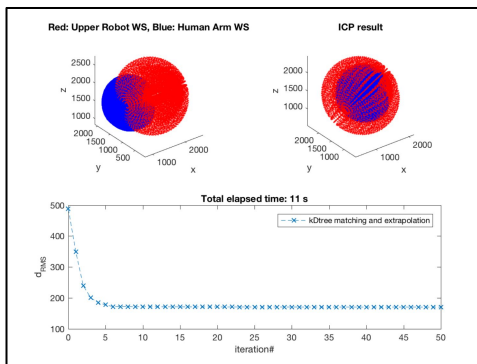
Project → A five robotic arm system that emulates virtual reality environments to a user through haptic feedback

Tasks → Ownership of the **end-to-end development** for the entire **hardware system** and software **controller**

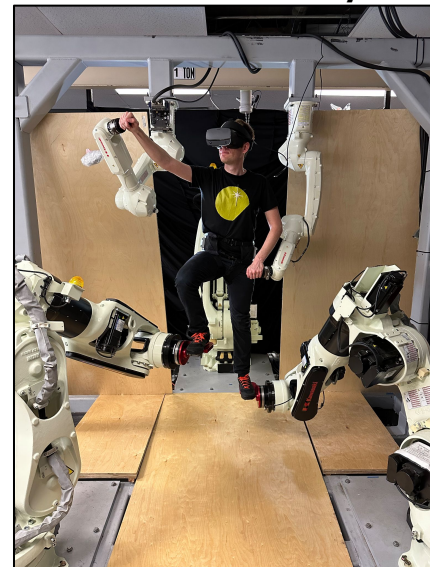
Conceptualization



Analysis Driven Iterative Design



Product Delivery



Erik Kramer | Virtual Reality Exoskeleton (V-Rex)

Objectives

- Design and fabricate a novel full body haptic device integrating industrial robots and custom parts
- Develop a safety-conscious controller to allow for human-robot interaction through force feedback

Process

- **Cognizant management** of all aspects of development, fabrication, assembly, and integration
- Led support engineers and **reviewed** their work and drawings
- Created hardware designs, configurations, and drawings
- Developed **controller architecture**

Results

- Demonstrated design and functionality of real time safety features through experimental data
- Submitted methods and design for peer reviewed journal publication

[Click](#) for Safety Control Feature Video Demo

Safety-Focused Admittance Control for Physical Human-Robot Interaction with Rigid Multi-Arm Serial Link Exoskeletons

Bionics Lab
University of California, Los Angeles (UCLA)

[Click](#) for Virtual Reality Demo

