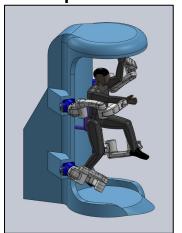
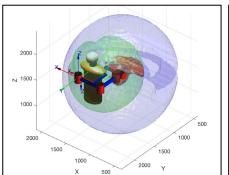
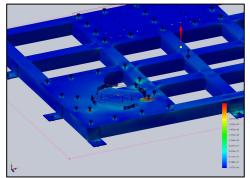
Erik Kramer | Virtual Reality Exoskeleton (V-Rex)

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

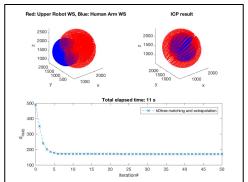
Conceptualization

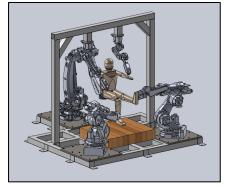






Analysis Driven Iterative Design





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

<u>Click</u> 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



