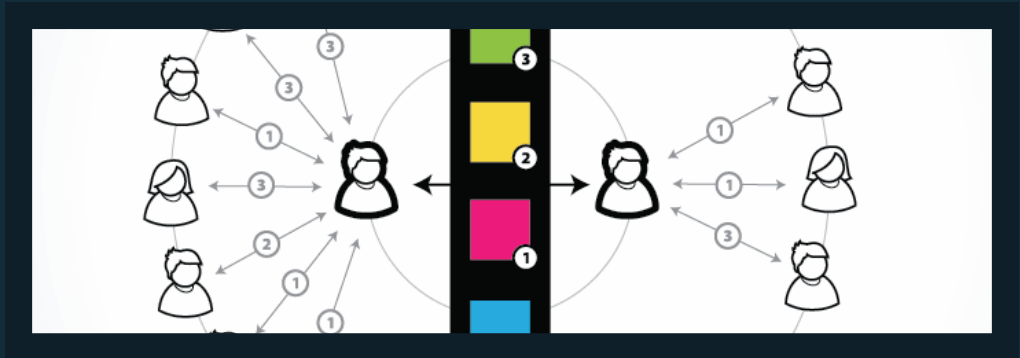# HUMAN INTERFACES

TO

TRAINING TECHNOLOGY

Will my investment in enhanced training technology pay off?

Advances in training technology are exciting—it's tempting to invest right away. However, if you don't first assess the impact of the technology on training transfer, new technology can provide little benefit… or worse, it can interfere with learning and reduce performance.

By observing, analyzing, and measuring trainee and trainer decision making and behaviors, our scientists and engineers design intuitive, multi-modal interfaces that are empirically measured to effectively transfer knowledge to trainees and build their skills. We offer:

Targeted Domain Analysis across military, healthcare, and professional domains using cognitive systems engineering

Advanced Interface Design methods to drive novel, constraint-driven visualizations for trainee and observer/controller systems

Multi-Modal Immersive Architectures including AR/VR integration frameworks for low-to-mid fidelity commodity devices, ensuring best practices are implemented in the training systems.

When you select Charles River Analytics to design your training interfaces, you'll have the evidence to prove that your training technology dollars are being spent wisely.
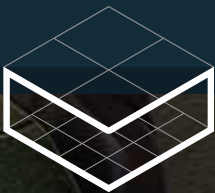
Charles River Analytics has brought state-of-the-art domain analysis into training system design, can draw upon proprietary processes and tools to optimize training system architectures, and can ensure a high rate of return on your training investments. We help out clients ensure that their spending delivers returns that will have long-term payoffs for their organization.

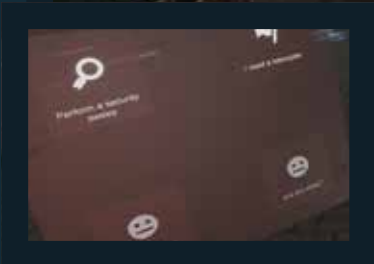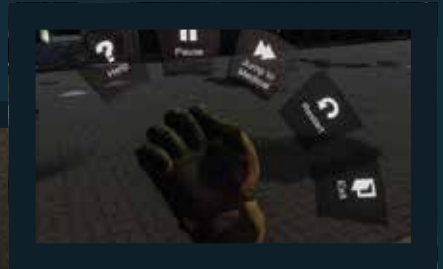## Providing Natural Human Interaction within Simulations

Charles River Analytics partnered with Sensics, TMST Consultants, and the Virtual Reality Medical Center to support natural human interactions in virtual, augmented, and mixed reality environments. These interactions are important when trainees must develop learned muscle memory for physical tasks.

We developed VIRTUOSO to offer natural user control in any virtual environment. Trainees can work independently because VIRTUOSO automatically assesses skill proficiency, but they can also receive feedback from expert trainers remotely observing their sessions. Because VIRTUOSO gracefully incorporates so many leading commercial control and display peripherals, it can support the equipment best suited to a training task or the equipment available when an individual is ready to train, and simulations that incorporate VIRTUOSO are resilient to future technology advances.

VIRTUOSO (planned for Open-Source release in Q1 2019) can significantly improve military medical training and education, such as combat casualty training. Ongoing work focuses on ways that VIRTUOSO's additional natural interaction capabilities benefit trainees compared to alternative virtual and mixed-reality setups and live training.

VIRTUOSO

About Charles River Analytics

Founded in 1983, Charles River Analytics is an Employee-Owned Small Business, now with nearly 200 employees, many of whom hold advanced degrees. Our clients are a "who's who" of government and industry. The original focus of our business was working with the Department of Defense, and we continue to enjoy ongoing relationships supporting DoD, Army, Air Force, and Navy organizations. Today, our relationships with clients throughout government and industry enable us to bring best-in-class research and ideas to the projects we undertake for our customers.

We work with our clients to translate new ideas and research into actionable solutions to the opportunities most important to their success. Charles River Analytics has a solid track record of success in providing our clients with AI systems, technology, software tools, and design and analytic services in a variety of settings. In recent years, we have worked defense, intelligence, medical technology and health care, training, transportation, space, cyber security, and more.

U.S. Prime Contractor   Employee-owned Small Business

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