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On the Development of a General-purpose Augmented Reality Training Framework



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Spectrum of Realities for Training



Training/Design
Manuals
And Power Points

Opportunity



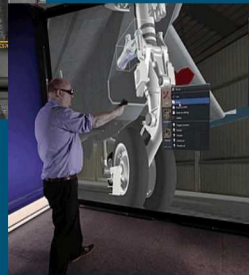
Real-World
Operations



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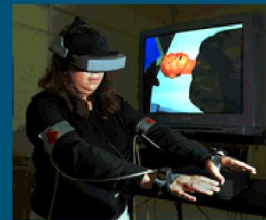
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Augmented Reality
Information Overlaid on
Real-World



Mixed Reality
Interact with
Graphical Overlays
on Real World

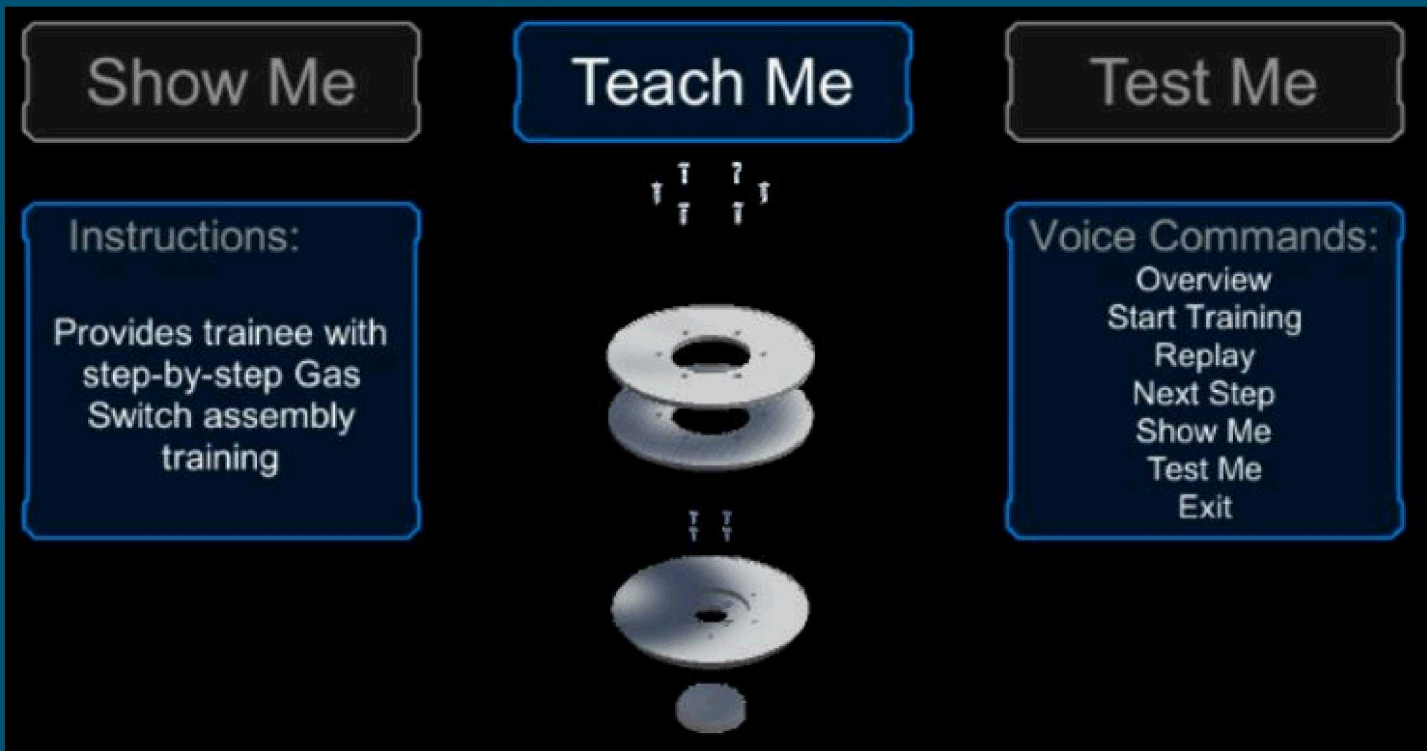
Virtual Reality
Immersive
Graphical
Environment



Augmented/Mixed Reality Training Framework

- Create a General-Purpose Training Framework
 - Reusable
 - Simple and Intuitive
 - Training Area Focus: Assembly, Disassembly, Maintenance
- Employ State-of-the-Art User Experience (UX) Concepts
- Applying Learning Science Techniques to “Make Learning Stick”
- Engage Learners in Interactive Training Scenarios
- Allow Practice of What-if and High Consequence Scenarios
- Increase Retention Through Repetition and Knowledge-Testing

Prototype Training Framework



- Demonstrate
- Spaced retrieval

- Elaborate
- Interleave learning
- Spaced practice

- Self-quiz
- Desirable difficulty
- Reflection

Where We Are Going

- Machine Learning-Enabled Intelligent Training
 - Responds Intelligently to Trainee Behaviors
 - Confusion
 - Boredom
- Provide Various Training Levels: Beginner to Expert
- Adaptive to Users/Trainees
- Human Performance Evaluations
 - Quantify Training Effectiveness
 - Quantify Training Transfer and Retention
- Authoring Tools Being Considered



THANK YOU!

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