Haptics Symposium
March 4-7, 2012 | Vancouver, Canada

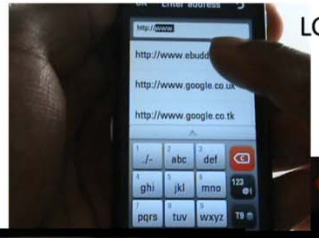
Haptic Hardware Evaluation Practices

Haptic Hardware: expanding into more product applications

Driver Control

Lexus RX 450h
Remote Touch control

Touch Screens



LG BL40

Touchscreen with haptics

Synaptic Fuse

TouchSense Tactile technology of Immersion Corp.

Computer Games

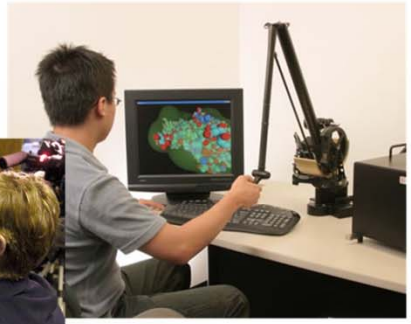
Nintendo Wii

Logitech Driving Force GT

Novint Falcon with Pistol Grip

Research Tools

PHANTOM 3.0/6DOF from SensAble Technologies, Inc.



Maglev 200™ System from Butterfly Haptics, LLC.

Surgical Simulators & Robotics

MIRO system from DLR

Sensei Robotic Catheter System from Hansen Medical

Surgical robots with omega haptic interface from Force Dimension

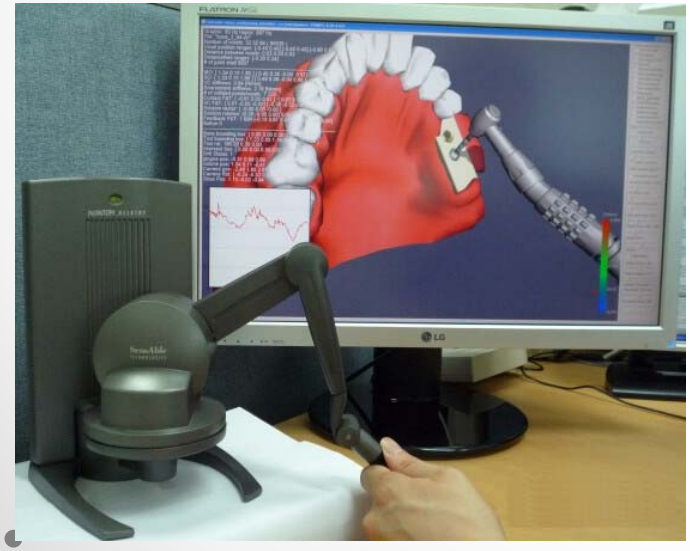
VirtaMed HystSim with Xitact IHP

Haptic Hardware: different task spaces

Soft Tissue Surgery: low stiffness tasks

Excavation: stiffness discrimination

Dental Drilling: high stiffness tasks



Fixing the US Economy: sticky tasks

Haptic Hardware: which device is right?

Haptic Hardware:

Schedule		
08:30 – 08:50	Evren Samur & Curt Salisbury	Welcome & Introduction
08:50 – 09:20	John Morrell	Performance Measurements for Robotic and Haptic Actuators
09:20 – 09:50	Antonio Frisoli	A comparative assessment of performance of active exoskeletons for haptic feedback: tendon driven vs harmonic drive based designs
09:50 – 10:20	Mike Zinn	Admittance-based Haptic Interface Performance Evaluation and Associated Challenges
10:20 – 10:40	Coffee Brake	
10:40 – 11:10	Curt Salisbury	Bridging the gap between design requirements and application performance: using human observers
11:10 – 11:40	Evren Samur	Guidelines for Haptic Interface Evaluation: Physical and Psychophysical Methods
11:40 – 12:00	ALL	Summary