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## Multimodal Interaction Technology


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## Unit 2: HAPTIC INTERFACE



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## What is haptic?

- Deals with the sense of touch.
- Interact with objects through touch.
- Include tactile or sensation.



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## What is haptic interface?

- Allows users to interact with a multimodal interaction system through haptic elements.
- Normally implemented in VR environments.



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## Example of haptic devices

- CyberGlove's CyberForce
- CyberGlove's CyberGrasp
- CyberGlove's CyberTouch
- SensAble's PHANToM® Desktop



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### **P5 wired glove**

A dataglove or cyberglove.



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## Haptic interface applications areas

- Desktop augmentation
- Physical rehabilitation
- Electronics entertainment
- Tele-robotics and medical robotic
- CAD tools



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### Sony DualShock 3 game controller

Equipped with the haptic feedback or force feedback.



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## Human haptic sensing

- **Cutaneous (Tactile)**
  - Heat, pressure, vibration, slip, pain
  - Stimulated by stimulus to skin
- **Kinesthesia (Proprioception)**
  - the ability to sense the position and movement of the body parts
  - Stimulated by bodily movements



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### Jump Pack

Dreamcast haptic feedback device similar to Nintendo's rumble packs.



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## Future applications areas

- Environment modelling
- Immersive virtual reality
- Integrated multimodal feedback



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## Conclusions

- Haptic interface is gaining its popularity.
- Contributions in the field of medical and education.



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# THANK YOU

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