

Research personnel in the Bionics and Cognitive Science Centre

Academic Staff

Acting Director: Dr Barry Richardson
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Phone: 61(0)3 51 226432
Interests: Application of haptics to virtual environments, sensory substitution, teleremote surgery, simulation, and robotics

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Interests: Neuroscience, haptic illusions

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Interest: Computer games and their effects on early development

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Interests: Active and passive touch, kinaesthetic and cutaneous processes

Assoc Prof Yousef Ibrahim
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Interests: Robotics and artificial intelligence

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Interest: Multimedia programming, medical applications

Dr Madhu Chetty
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Phone: 61(0)3 51227148
Interests: Programming and artificial intelligence

Overseas Associates

Professor John Kennedy, Toronto University, Canada
Interests: Drawings by the blind; haptics

Professor Ken Johnson, Johns Hopkins University, US
Interests Sensory processes (especially touch)

A/Professor Gunnar Jansson, Uppsala University, Sweden
Interests: Mobility aids

Programmer

Mr Jonathan Wells,
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PhD Student: George Van Doorn
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Interests: Cross-modal perception

When a subject is required to match the sizes of two separate cubes (i.e., looking at one and feeling the other), they may select a match that more closely relates to the cube presented to vision. In this situation, the subject has over-relied on visual information. In

the past, this has been referred to as visual dominance. George's research is designed to show that perception is a process of integration rather than domination.

MA Student: Caroline Jervis

Cognitive Science

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Interests: Perceptual processes common to haptics and vision

Caroline is examining whether Gestalt laws of visual perception apply to haptic perception.

If they do, then this will support the idea that a common region of the brain mediates spatial perception in both visual and haptic modalities. If even higher processes are common, then it may also be possible to appreciate art via haptics.

MA Student: Freeda Fernandez

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Interest: Cognitive factors in face recognition

Freeda is examining why recognition of a face seen previously appears to be better facilitated when the background (context) is similar to the original background in which the face was seen rather than identical.

Honours Student: Robyn Bodinnar

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Interest: Exploring human behaviour within a non-violent, simulated computer game.

Within a virtual game such as 'The Sims' (EA Games, 2000), individuals are not generally restrained by the legal and social conduct prescribed to, and expected by, civilians within the 'real' or physical world. Players wishing to contravene social and legal processes in a virtual world can do so with few 'real' negative outcomes. Robyn's study examines how individuals behave in an environment where the ramifications for deviation and antisocial conduct remain limited. Using 'The Sims' as a simulated environment, the research is designed to explore whether game players are more inclined to violate social norms, or maintain an acceptable level of conduct. An additional aim is to examine how the presence of another person in the form of an avatar (perceived or actual), influences participant behaviour within the game environment.

Industry Consultants

Robert Accardi, Priority 1 Design Ltd., Melbourne

Haptic exoskeleton design

Goran Filipovic GFE Systems, Melbourne
Exoskeleton programming

Ivor Bryan STEM Partnership, Melbourne
Technology evaluation

Stephen Furner, British Telecom, UK
Multimodal communications