**Australian AT Conference 2018 – Presentation Submission**

**Title**

An Interactive and Therapeutic Gaming System to Encourage Bimanual Use – from Research to Market

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**Abstract** (250 words)

Cerebral palsy (CP) is the most common cause of childhood physical disability and affects more than 34,000 people in Australia. Most children with CP prefer to use their dominant, less-affected hand for upper limb activities, meaning limb non-use can be an issue. A common approach to engaging the non-dominant, more affected limb involves constraint of the dominant limb or encouraging bimanual upper limb activity.

The *OrbIT Gaming System* (OGS) is a haptic, accessible, and independently operable ‘serious gaming’ system that was designed to engage children with an upper limb impairment and sensory deficit due to CP. The OGS can only be used when both hands are actively engaged on the controller, meaning an integrated, forced-bimanual use paradigm is achieved. Thus, the OGS combines an engaging leisure activity (computer gaming) with therapy to motivate the child to continuously use both hands in a coupled bimanual activity. The technology has been successfully piloted with both children with CP and adults post-stroke, achieving statistically significant positive outcomes on both occasions.

This presentation will provide an overview of the research that led to the design and development of the OGS, and the process that led to the creation of a more commercial, user-centric version of the technology, called *i-boll*. A particular focus will be on university engagement with industry, and the process of translating a proof-of-concept prototype trial device into a commercially viable product, by specifically addressing device usability, accessibility, adaptability, durability and affordability.

(240 words)