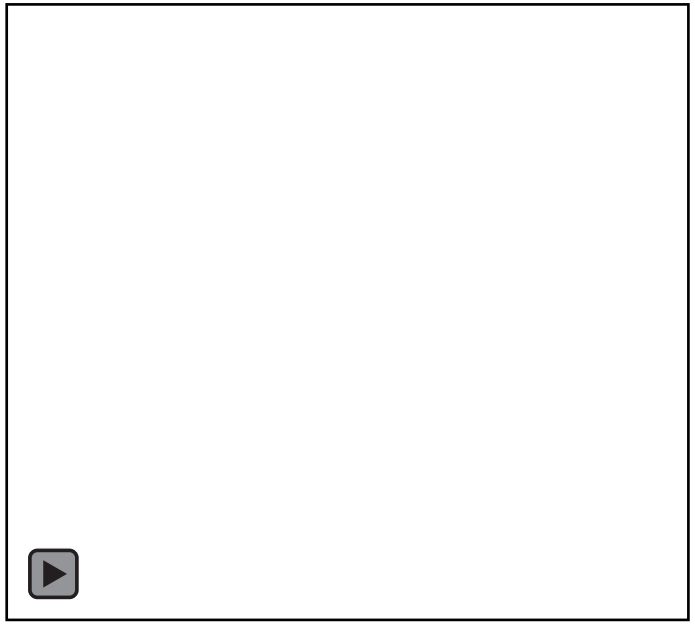
Co-Designing Programmable Fidgeting Experience with Swarm Robots for Adults with ADHD

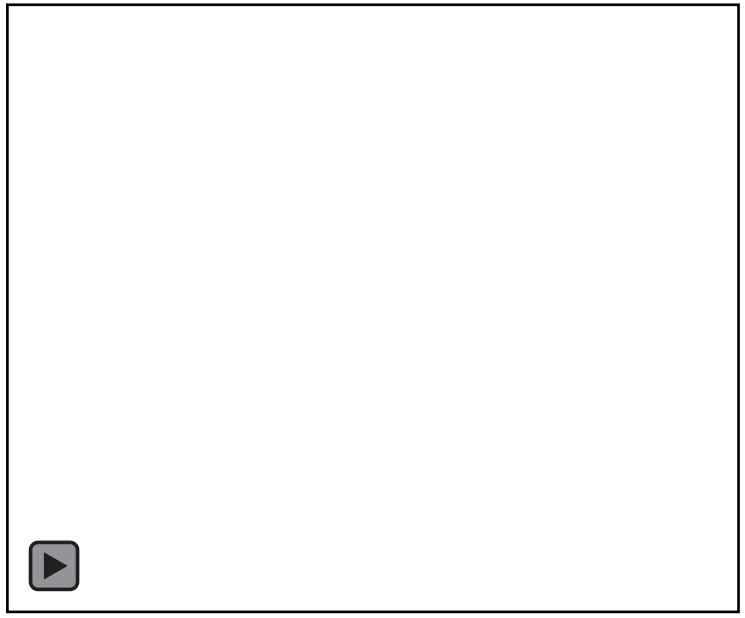
Motivation:

- Lack of research in HCI for assistive technologies for adults with ADHD
- Fidgeting is defined as one of the symptoms of ADHD by DSM-5
- Fidgeting can help with concentration and emotion regulation
- Fidgeting is a very personal behaviour that varies widely among individuals
- Individuals with ADHD can exhibit both hypo-responsiveness and hyper-responsiveness to sensory stimuli
- The diverse assortment of fidget tools currently available are not customizable

Enhancing fidgeting Interactions with Small Robots

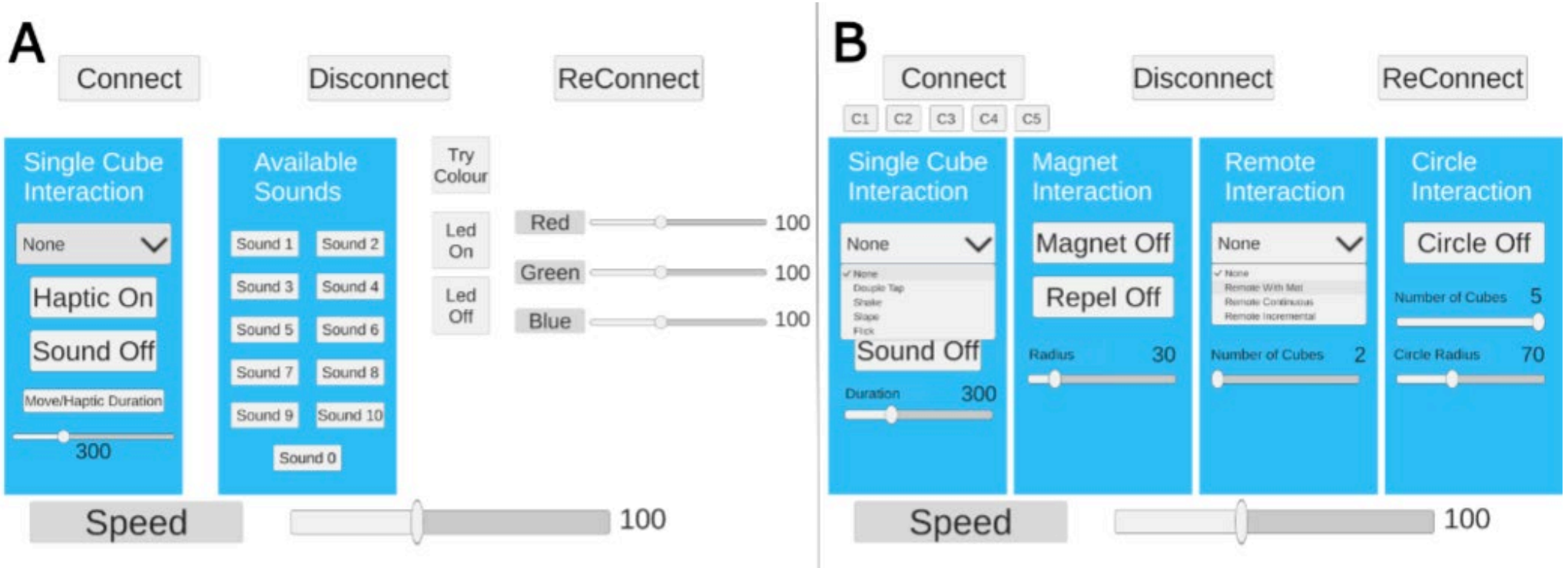
- Equipped with sensors, speakers, and displays and can provide haptic and tactile sensations
- Versatile interactions beyond passive mechanical limits
- Programmability allows for customizable and personalized fidgeting experience



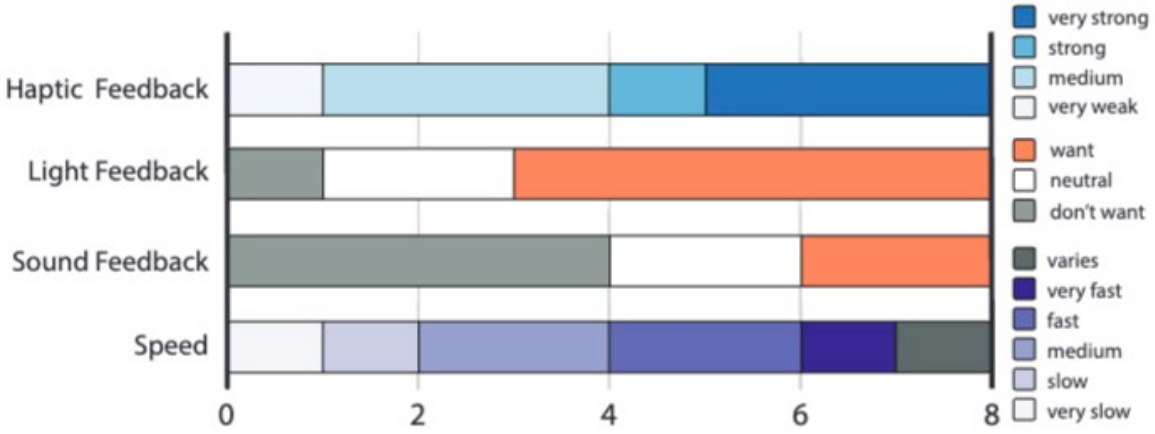
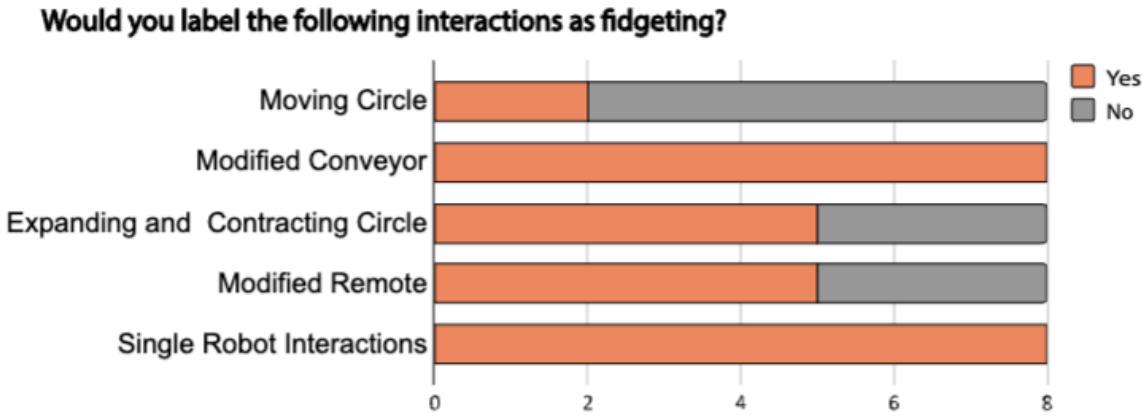


Research Methodology

- Co-design approach: Collaborate directly with adults diagnosed with ADHD in the design process to ensure the outcomes meet user needs
- Two-part co-design process: Design Workshop and Evaluation Workshop
- Tools used: Sony Toio robots and web-based UI applications for customizing fidgeting interactions



Fidgeting Interactions

Results

- 15/16 participants liked the idea of robots as fidget tools
- Preferences regarding different aspects varied including the preferred number of robots
- There were diverging opinions on whether the designed interactions were considered fidgeting