

Graduate School of Science and Technology Master's Thesis Abstract

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Thesis title	Kinesthetic Actuation using Pneumatic Actuators and Brakes Kinesthetic Actuation using Pneumatic Actuators and Brakes		
Abstract			
<p>This paper presents a novel kinesthetic actuation for Virtual Reality that combines a Pneumatic Artificial Muscle (PAM) with a brake mechanism. The device is capable of producing highly realistic haptic feedback by leveraging the high force-to-weight ratio of PAMs and the precise control of the brake. The device can exert motion or stop the motion immediately, providing users with a more realistic and immersive haptic experience. The design and implementation of the device are discussed in detail, along with experimental results that demonstrate its performance and capabilities. Overall, this kinesthetic actuation represents a significant advancement in the field of haptic technology and has the potential to be applied in wearable haptic feedback and power-assist exosuit.</p>			