A Bio-inspired, Flexible, and Retractable Robotic Tail Exoskeleton

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This research introduces a bio-inspired robotic tail exoskeleton designed to assist human balance, drawing inspiration from animals like cats and kangaroos. The device aims to address the significant issue of falls, especially among the elderly. Its key features include a 3-degree- of-freedom mechanism, retractability for portability, low-cost materials, and adjustability for various body types. Keywords: Bio-inspired tail exoskeleton, robotic tail, balance assistive device, fall prevention, flexible robotic tail, 3DOF manipulator, biomimetic mechanical design, posture sensor, collapsible exoskeleton, biomimicry.

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