NATIONAL NEWS

UPES Engineering Students Revolutionise Mobility With Innovative Gesture-Controlled Wheelchair

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Students from UPES School of Advanced Engineering have developed an ingenious wheelchair which enhances mobility for the elderly and individuals with lower limb disabilities. The wheelchair's modular design includes essential features like hand-gesture recognition using inertial measurement units, a dual motor control system that mimics four-wheeler steering, and fall detection, among others. This one-of-its-kind technology transforms traditional mechanical wheelchairs into modern electronic ones that can respond to electronic sensory inputs.

The modular design of the wheelchair incorporates several essential features such as hand-gesture recognition using inertial measurement units, and a dual motor control system resembling four-wheeler steering, fall detection amongst others. The device offers a new perspective on traditional manual and joystick wheelchairs by providing users with greater independence and affordability. For patients with severe limb mobility issues, this wheelchair is particularly beneficial as it can be controlled using only hand and finger movements. Additionally, the integration of a differential axle for efficient power distribution, combined with a hand-gesture control device, is a novel feature not yet documented, adding uniqueness and importance to our innovation.

The team comprising two final-year students from electronics and communication engineering namely, Kriti Chauhan and Anubhav Tyagi along with mentor Prof. Piyush Kuchhal has filed for a patent for this innovative and cost-effective solution.

Through the integration of motors with these mechanisms, this innovation empowers users with a more versatile and responsive mobility solution. The intuitive control system allows users to effortlessly navigate using simple hand gestures. The project was completed in 8 months from ideation to implementation and testing.