



## The Prototype of Assistive Cane for Climbing up the Stair

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**Abstract.** The elder and patient with osteoarthritis knee had the problem to climb up the stair. The purpose of this research was to design and construct the prototype of assistive cane for climb up the stair. The assistive cane use Arduino to control the motor, send the power to the gear set to lift the user up the stair. The lifting plate help to reduce the burden at the knee joint while climbing up the stair. The foot force sensing device used to measure and collect the force act on the insole while walking on the floor, climbing up the stairs and climbing up the stairs using the assistive cane. The assistive cane could be help to reduce the burden at the knee joint and the force on the insole when climbing up the stair.

**Keywords:** Assistive Cane, Climbing up the Stair, Elderly, Osteoarthritis Knee