Design Practicum - (IC 201P)

UTKRAMAN

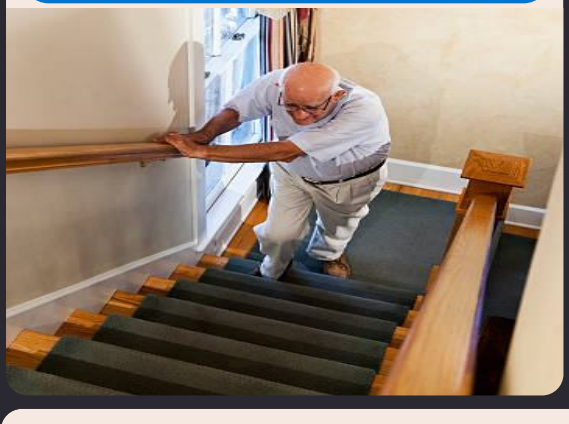
Simple Step Climbing Robot For Humans

Group - 12

Course Instructor: Dr. Gajendra Singh

Problems Solved

- **Accessibility for Elderly or Disabled Individuals:** assist them in navigating staircases, allowing them to access different floors in buildings or outdoor spaces more easily.
- **Physical Rehabilitation:** provide support and assistance during the rehabilitation process.
- **Delivery and Logistics:** could be used to carry loads up and down stairs efficiently.
- **Construction and Maintenance:** assist workers in transporting tools and materials between floors safely and efficiently.



Team and Mentors

Students Team

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Ayush Gupta - B22034
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Vishal Kumar - B22339
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Faculty Mentor

Dr. Venkata Ratnam V, SCEE

Future Prospects

- Cushioned seats to avoid user fatigue
- Teleoperation via mobile app.
- LCD screen to provide front view to the user.
- Emergency stop buttons and weight sensors to prevent overloading and ensure user safety.

SALIENT FEATURES

- Adaptable to different architectural configurations and mitigates jerks.
- Expected load carrying capacity is 50-60 kg at a pace of about 0.5 m/s.
- Automatic incline adjustment using a linear actuator.
- Rechargeable and replaceable batteries.
- Less maintenance cost.