

# AI Systems for Personalized Wearable Robotic Systems

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## Assistive technology tailored to individuals

Current prosthetic and assistive technology provides a generalized solution for users, especially in assisting ambulation. However, there is a need for independent-control wearable robotics, especially for the leg, that adapt to the individual's gait and walking style to sufficiently augment ambulation while still being comfortable, easy-to-fit and lightweight.

## AI technology for use in wearable robotic applications

Researchers at Georgia Tech have developed technology that is intended for use in wearable robotic applications, including prostheses and exoskeletons. This algorithm is made to be used in wearable robotics that can be worn on the body to restore, replace or augment human functional capability. This technology involves an AI system that estimates the underlying physiological state to generalize control to different users. The algorithm is capable of learning unique gait characteristics from individual subjects and adjusting control to provide a more personalized experience.

## Summary Bullets

- The system generalizes to different users, varying terrain conditions and walking speeds.
- The system is designed to transfer between different wearable robotics devices.
- The system optimally estimates the physiological state of the user to provide the best assistance that the wearable robot can give the user allowing for optimal control across tasks.

## Solution Advantages

- **Adaptable:** The system generalizes to novel users and varying terrain conditions and walking speeds.
- **Transferrable:** The system is designed to transfer between different wearable robotic devices.
- **Optimal:** The system optimally estimates the physiological state of the user to provide the best assistance that the wearable robot can give the user allowing for optimal control across tasks.

## Potential Commercial Applications

- Assistive devices for aging mobility applications
- Safety devices to reduce injury risk and fatigue in workers in physically demanding industries
- Prostheses for amputees
- Assistive technology and devices for neurologically impaired
- Assistive devices for those recovering from injuries

## Inventors

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## IP Status

<p>Patent application has been filed</p>: US63/355242

## Publications

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## Images

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