3D Printed Stroke Rehabilitation Exoskeleton Design

(Technical Report)

U.S. Struggle for Control of User Data
How Opposing Forces use Similar Strategies

(STS Research Paper)

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How may technology better serve human wellbeing? The capstone project advances robotic exoskeleton research, seeking to improve patient's mobility. Examining corporation access to citizen's data shows how technology could also be a force for harm.

To develop a robotic exoskeleton design that best restores stroke patient's mobility, the project team built a 3D-printed, wearable, upper-body robotic exoskeleton. In the design, soft pneumatic actuators and motors guide patients through selective therapeutic arm motions. 3D printing accommodates an open source, lightweight design, and rapid prototyping. The final design is cost effective and produces repeatable therapeutic motion for patient rehabilitation.

In the United States, privacy advocates and data collectors compete to influence the privacy standards that govern data collection. To promote stricter regulations, privacy advocates such as the American Civil Liberties Union argue that privacy is a right. Tech companies and their trade associations, however, contend that data collection is essential to innovation.