

# Mobility Mat

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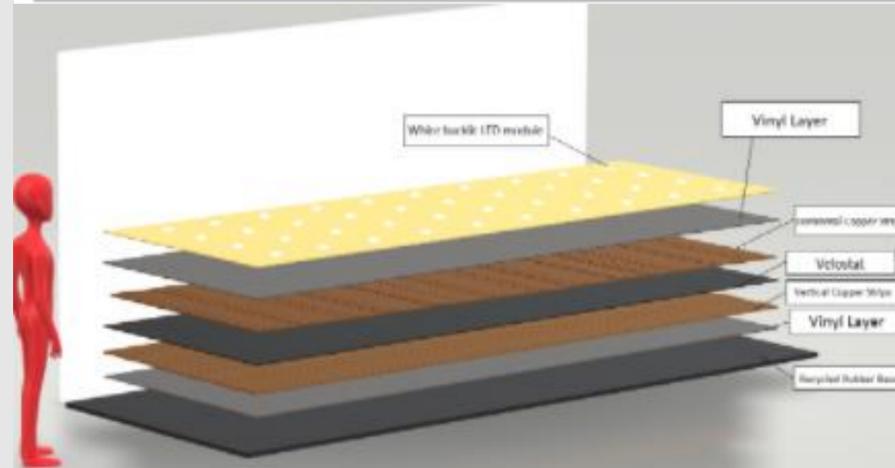
## Abstract

The Mobility Mat is a portable device that can potentially help millions of people in regaining the ability to walk properly after injuries or flare ups that arise from conditions such as Multiple Sclerosis (MS). It will help trainers and physical therapists make exercising with their clients much more efficient, as patients will no longer have to leave the comfort of their own homes to carry out their rehabilitative work out sessions.

## Introduction

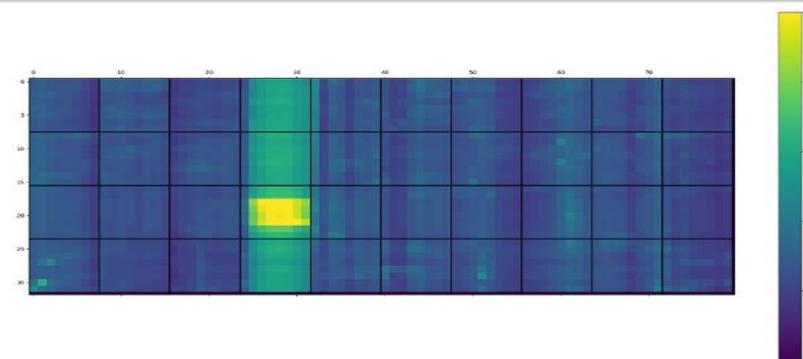
The Mobility Mat will assist with the process of helping patients walk and perform basic movements. This smart exercise mat should be compatible with software that will be used to program the mat to display certain patterns via LED lights that patients should memorize and duplicate with their own steps

## Methods and Materials



The mat consist of 7 layers as shown above and 5 main components: LED's, clear car vinyl, velostat, rubber mat and copper strips. The mat is controlled by an Arduino R3 and connected to several custom PCB's that run the LED matrix and the pressure sensor matrix.

## Results



The figure above is a visual representation of footsteps on the mat.

## Process

The mat starts to work once the instructor chooses a pattern. The pattern will light up and then the patient must replicate the same pattern. As the patient completes the patterns, the difficulty of the patterns increases working on different walking motions and improves memory.



## Conclusions

With the help of the Mobility Mat trainers will be able to more accurately pinpoint specific issues in posture and walking struggles that need improvement. This ultimately will be more effective in their methods of getting people healthy and walking properly again.

## Acknowledgements

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