



## TECHNOLOGY

# MakerWear

## OVERVIEW

Wearable construction kits have shown promise in attracting underrepresented groups to STEAM (Science, Technology, Engineering, Art and Math). They empower users to create self-expressive and personally meaningful designs while fostering an interest in computing. However, these kits require skills that young children (K-6) do not possess: programming, circuit design, sewing, and soldering. Though this complexity allows users to create a variety of sophisticated designs, it also presents significant challenges to young children and can impede playful experimentation and rapid prototyping.

Researchers at the University of Maryland have created MakerWear, a new wearable construction kit for young children that uses a tangible, 'plug-and-play' approach to wearable creation. MakerWear is comprised of two parts: (i) a single-function electronic modules that, when combined, create complex interactive behaviors and (ii) a flexible, magnetic socket mesh that is either pre-integrated into clothing or attached post-hoc like a fabric patch. The mesh provides power, a communication infrastructure, and an easy method to attach and remove modules. By manipulating these tangible modules, children can create a wide range of designs, such as a sound-reactive shirt that changes color with music, a fitness tracker that automatically counts and displays steps, or a new game of laser tag where children interact together through their designs.

## APPLICATIONS

- STEM education for young children

## ADVANTAGES

- Plug-and-play approach
- Single-function electronic modules to create complex behaviors
- Flexible, magnetic mesh that provides communication infrastructure

## CONTACT INFO

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## Additional Information

### INSTITUTION

University of Maryland, College Park

### PATENT STATUS

Pending

## **CATEGORIES**

- Software + Algorithm
- Engineering
- Devices
- Sensors/Monitors

## **EXTERNAL RESOURCES**

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