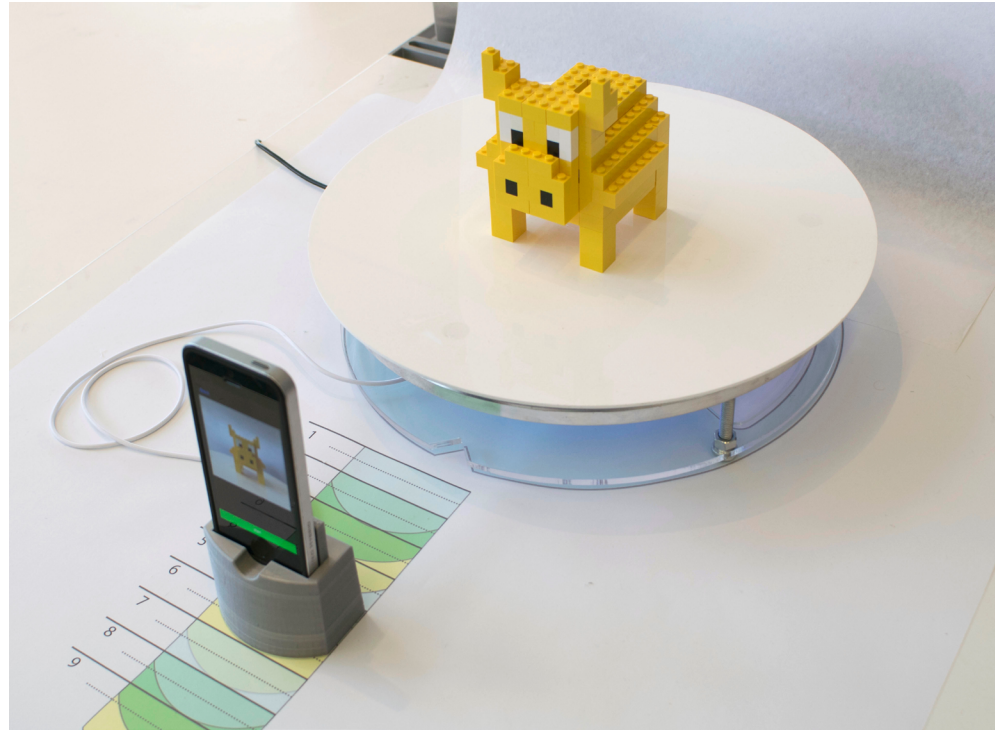


TIFFANY TSENG

...is a designer, engineer, and researcher who creates interactive systems that support learning and play, particularly for young people capturing and sharing their design process.

DESIGN PORTFOLIO 2016

(MORE AT WEB.MIT.EDU/TTSENG/WWW/)



SPIN

2015-PRESENT

INTERACTION DESIGN
MECHANICAL DESIGN
PCB DESIGN
WEB DEVELOPMENT
IOS DEVELOPMENT

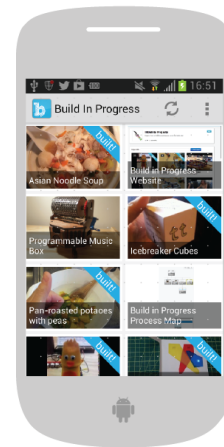
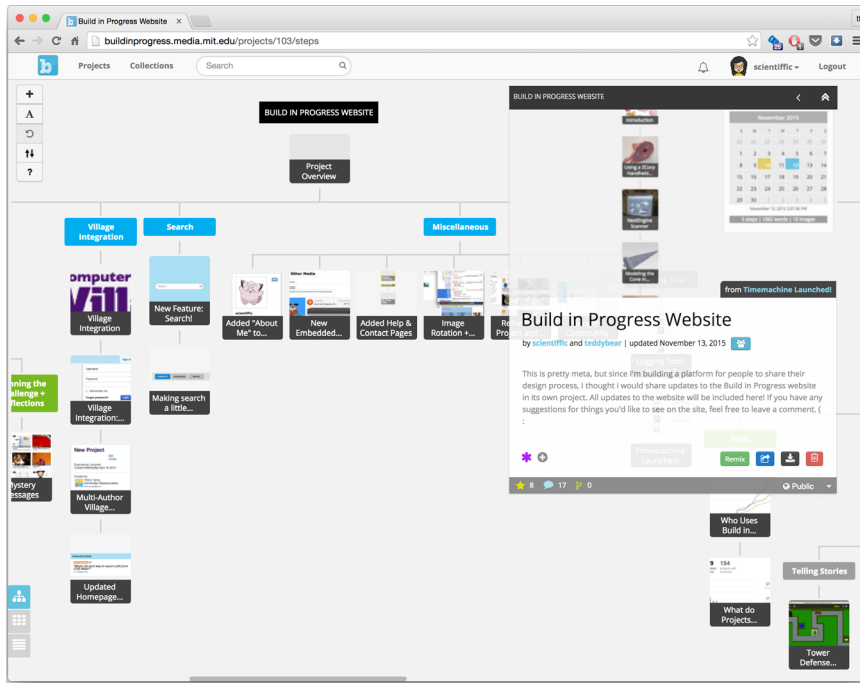
Spin is a photography turntable system for capturing how design projects come together over time. It consists of a DIY turntable and an iOS app with which users can create playful GIFs of their projects that can be shared on Twitter, Instagram, or any other social network.

Since launching in June 2015, Spin turntables have been in 25 different makerspaces around the world, with several schools and museums building their own from scratch.

This research examines ways in which an alternative documentation format can motivate and engage new audiences with capturing their design process.

AWARD

Maker Faire Bay Area 2015 Editor's Choice Award



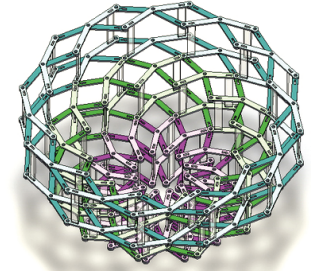
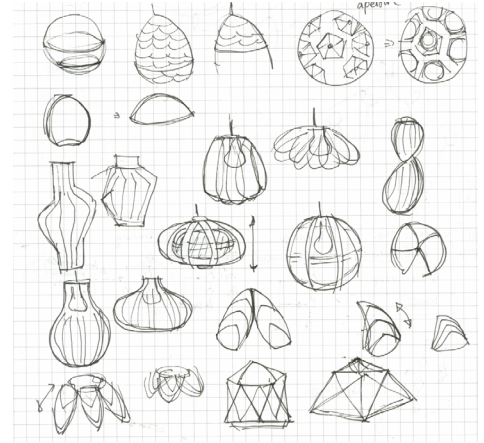
INTERACTION DESIGN
 WEB DEVELOPMENT
 MOBILE DEVELOPMENT (IOS + ANDROID)

BUILD IN PROGRESS 2012-PRESENT

Build in Progress is a platform for makers to document and share DIY projects as they're being developed. With Build in Progress, users can organize their design process into branches, showcasing design iterations in a project.

Since launching in May 2013, Build in Progress has supported over 1,500 designers from universities, schools, and out-of-school environments.

Build in Progress has created new opportunities for makers to receive feedback on work in progress, represent their efforts, and create expressive documentation that illustrates the emotional experience of learning to design.



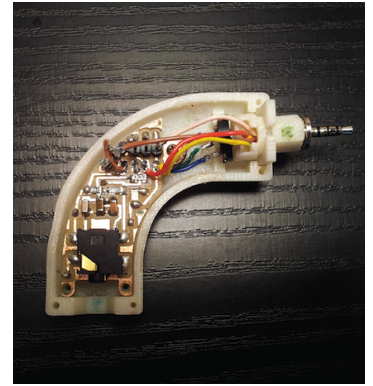
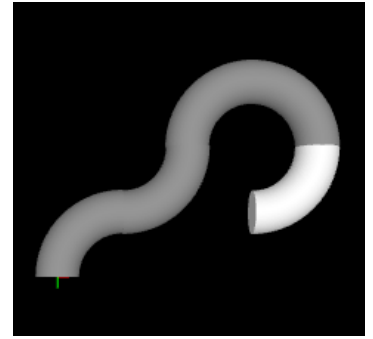
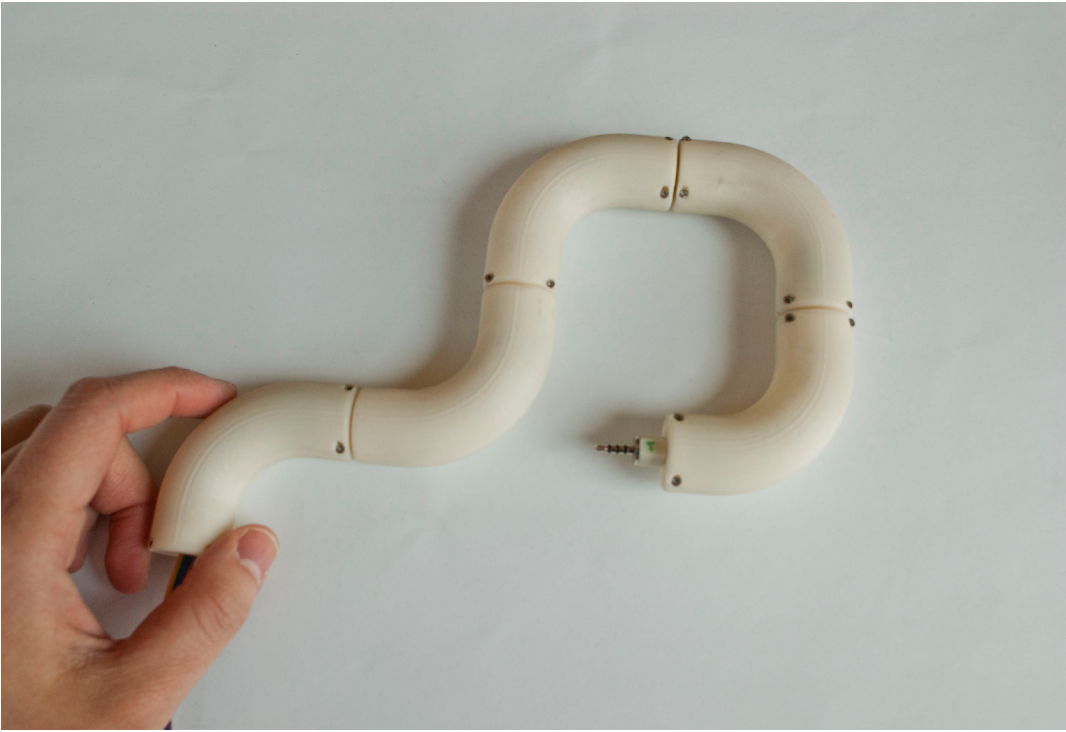
LUMEN

2013

MECHANICAL DESIGN
HARDWARE DESIGN

Lumen is a transforming lamp that emits different levels of light when it expands and contracts. It is made of three tiers of expanding two-dimensional polygons and semitransparent shades that alter the diffusion of light as the lamp expands.

The components of the lamp are generated from a parameter-driven SolidWorks model that can be modified to adjust the lamp's size; for example, you can create a small desk lamp or a hanging chandelier. Lumen is constructed out of laser-cut components and off-the-shelf hardware, making it accessible to makers interested in designing their own.



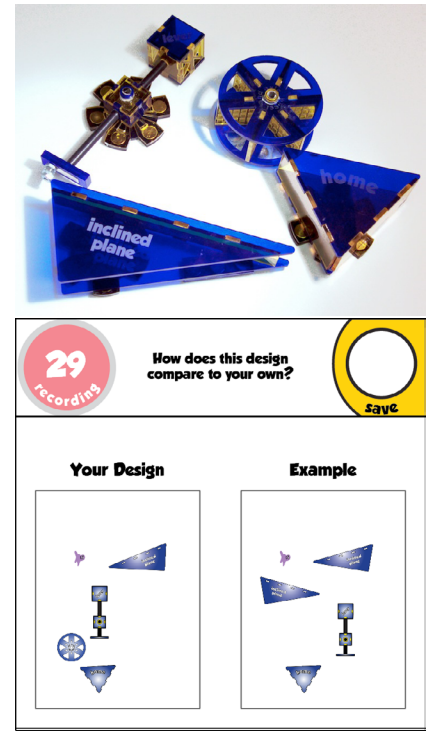
REPLAY

2011-2012

MECHANICAL DESIGN
PCB DESIGN
SOFTWARE DESIGN

Replay is a self-documenting construction kit for children to both share their designs with others and reflect on their own design process. Replay consists of a set of angular pieces that can sense their connection and orientation. A virtual model is rendered in real time as a design is constructed, and an on-screen playback interface allows users to view models from multiple perspectives and watch how a design was assembled.

Each Replay piece consists of a 3D printed shell, custom PCB, and potentiometer for sensing position. The recording software was created using Processing.



MECHANIX

2010-2012

INTERACTION DESIGN
MECHANICAL DESIGN

Mechanix is an interactive display and tangible toolkit for constructing Rube Goldberg designs.

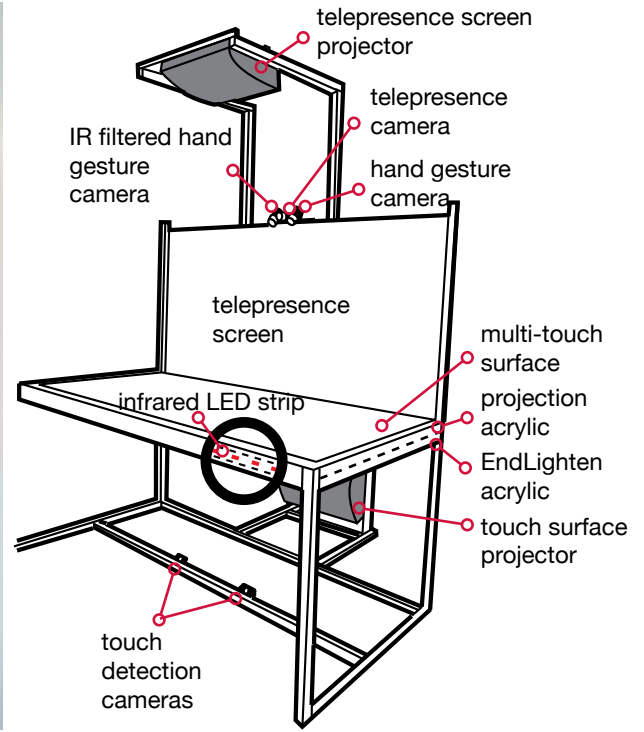
With Mechanix, children's tangible constructions are captured using a camera-based system. Their designs can then be projected directly on the display so that children can recreate and test each other's examples.

Mechanix integrates several interfaces for encouraging meaningful reflection, including video playback with audio narration, portfolio generation, and an active comparison mode to explore alternative designs.

AWARDS

Maker Faire Bay Area Education Award 2011

Disney Research Learning Challenge Innovation Award 2010



ADAPTABLE

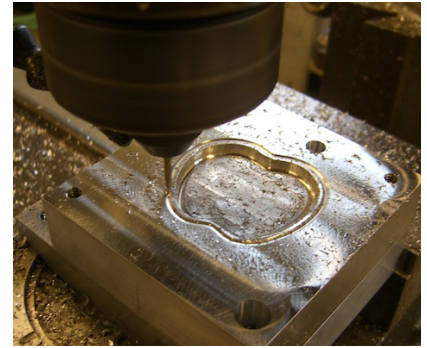
2009-2010

MECHANICAL DESIGN
HARDWARE DESIGN

AdapTable is a video conferencing system that enables globally distributed business teams to share and manipulate digital documents, supporting problem solving and decision making.

Two displays, angled 90° from one another, combine face-to-face video conferencing with a multi-touch horizontal tabletop for sharing data. Users' hands are captured and displayed on the companion system, enabling remote gesturing to information.

AdapTable was developed as part of the Stanford graduate mechanical engineering project course ME310 and was sponsored by SAP.



UNDERGRADUATE PRODUCT DESIGN PROJECTS

2008-2009

PRODUCT DESIGN
MECHANICAL DESIGN

Undergraduate design course projects include the following:

Thermosmart: A home heating system that enables custom temperature control in single zone homes. Grates with motorized louvers open and close to adjust airflow into a room.

Stack-It and Magnimals: Two toy products developed for inexpensive manufacturing in Brazil. Stack-It is a reverse Jenga game; Magnimals is an imaginary animal construction kit.

Apple yo-yo: Custom-designed yo-yos composed of injection molded and thermoformed parts.