

Sun-sensitive Origami Blind

Summer Semester 2017

Interdisciplinary International Interface Design Master Class

Prof. Dr. Jens Geelhaar

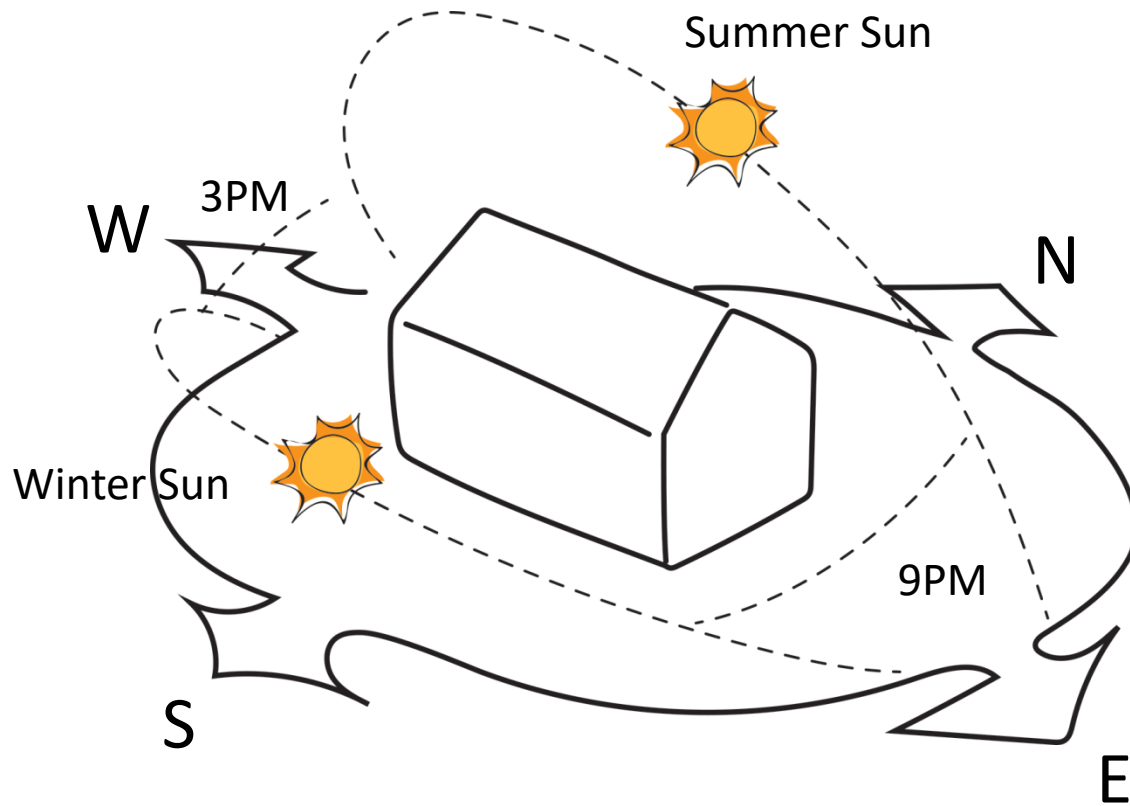
Presented by: Chanthorn Vinitwatanakhun (117604)

M. Sc. in Media Architecture

Proposal

- Interface between the Sun and an Origami
- Three-dimensional Interaction
- Integrating Media into Architecture

Sun Orientation



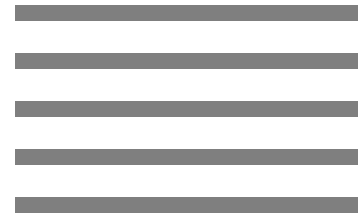
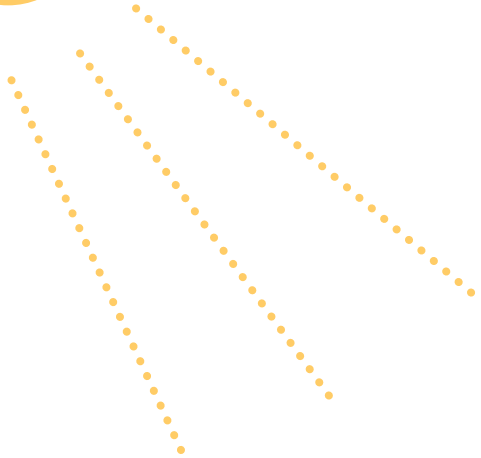
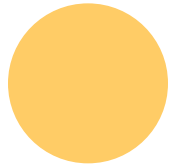
Sun Orientation and Blinding

Low Sun: Vertical Blinding

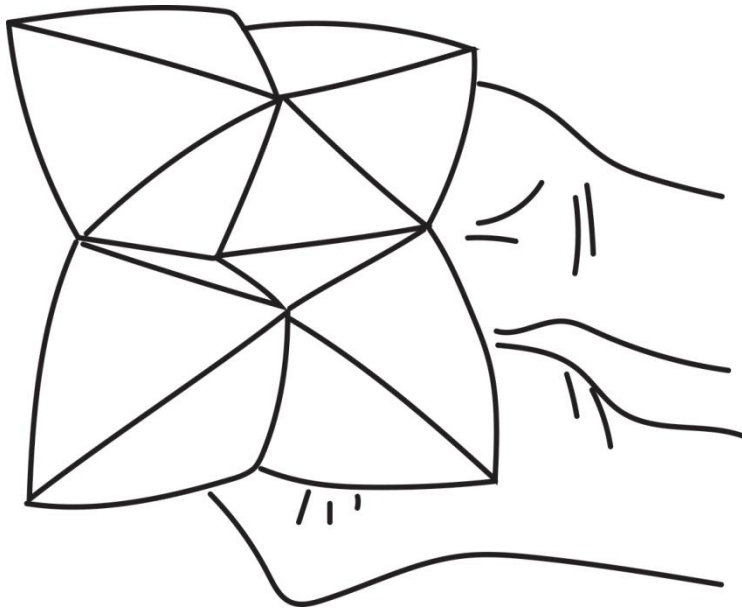


Sun Orientation and Blinding

High Sun: Horizontal Blinding



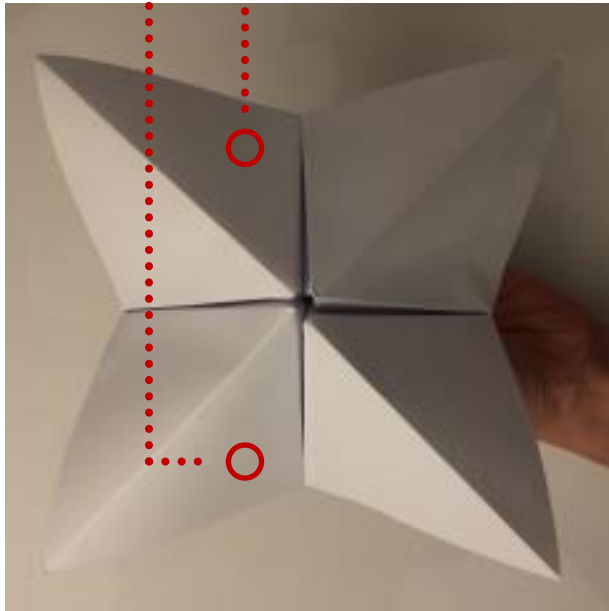
Form Inspiration: Cootie Catcher



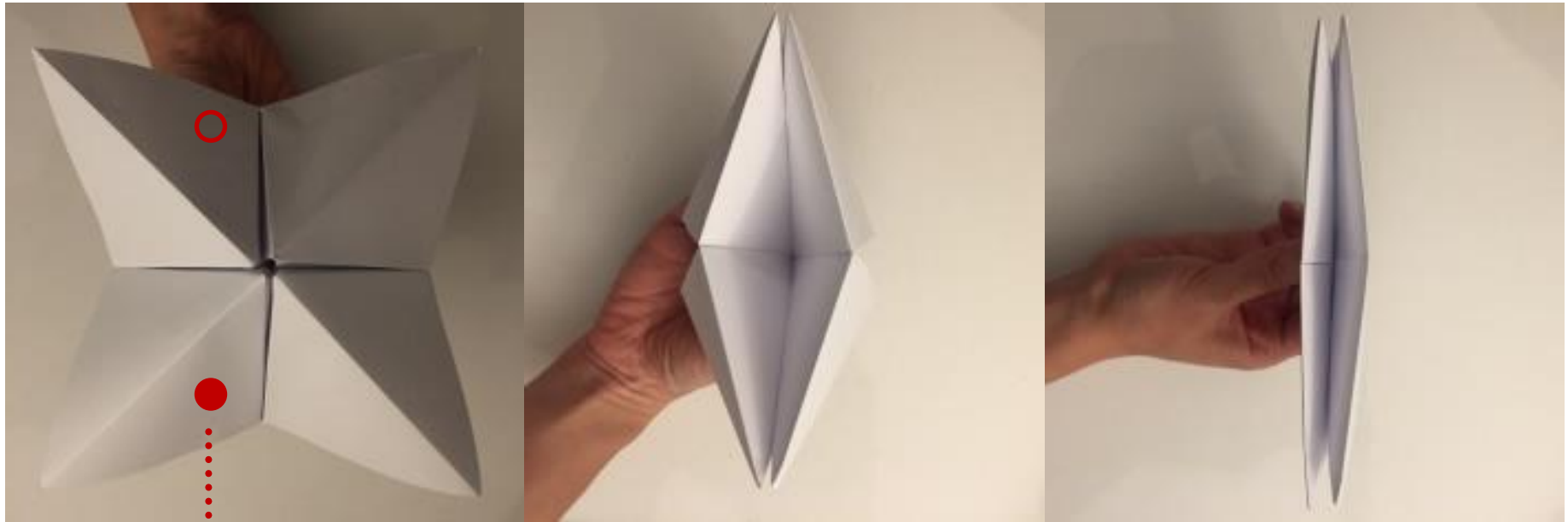
- Fortune-telling as a metaphor of weather forecast
- Flexible movement
- Angled

Movements of Origami: Original

Photoresistors



Movements of Origami: Vertical



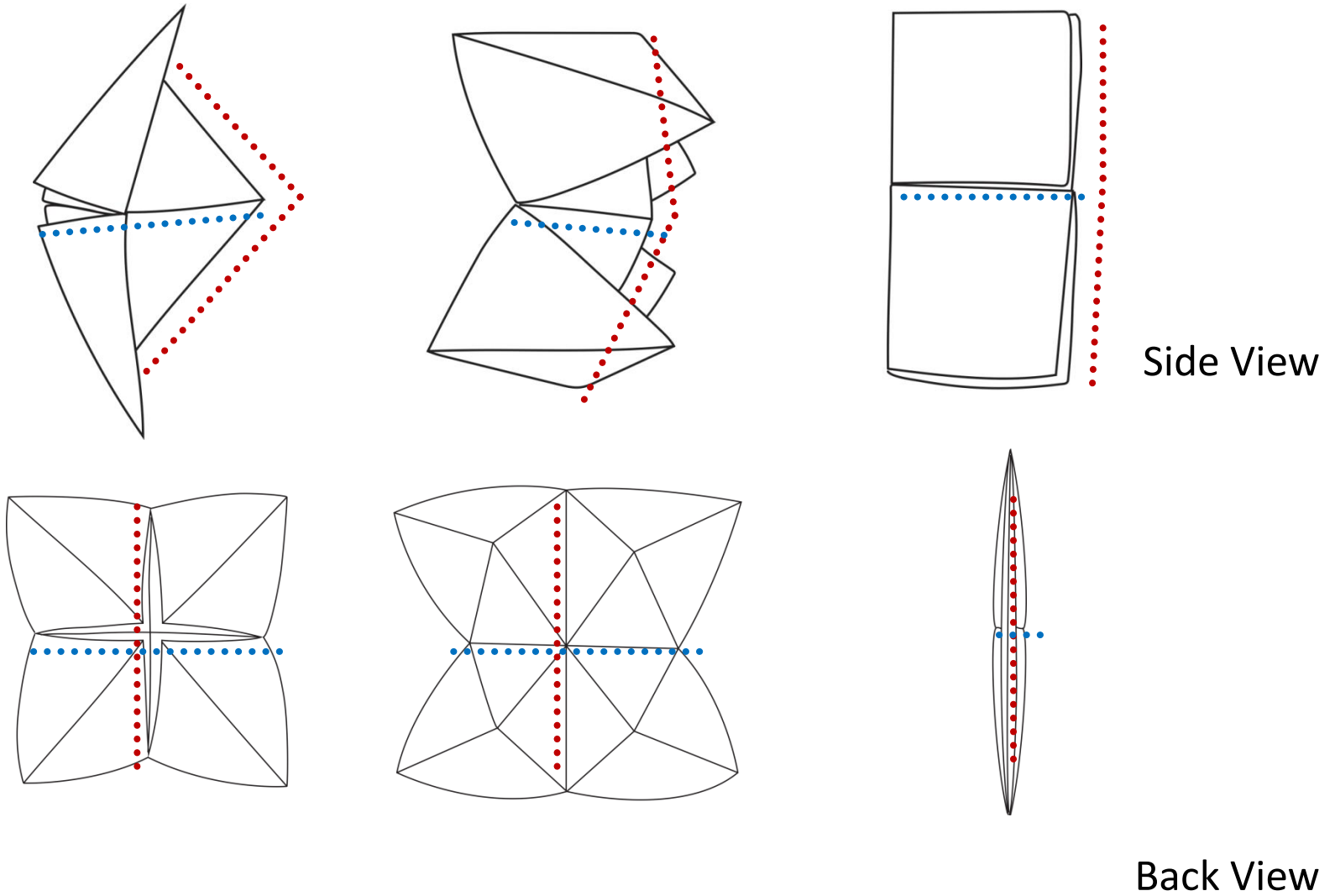
When the Sun is low, the lower Photoresistor will be activated, causing the origami to change to vertical form

Movements of Origami: Horizontal

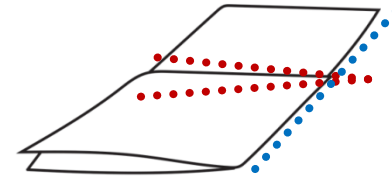
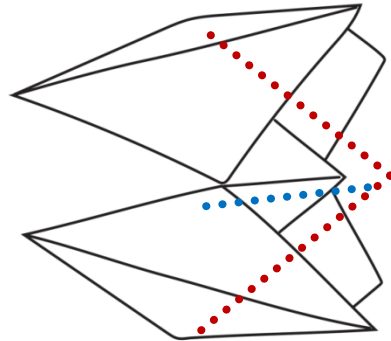
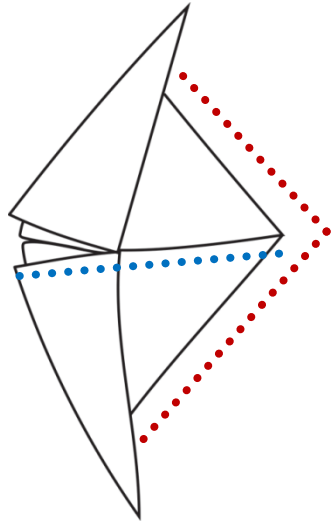


When the Sun is high, the higher Photoresistor will be activated, causing the origami to change to horizontal form

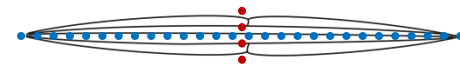
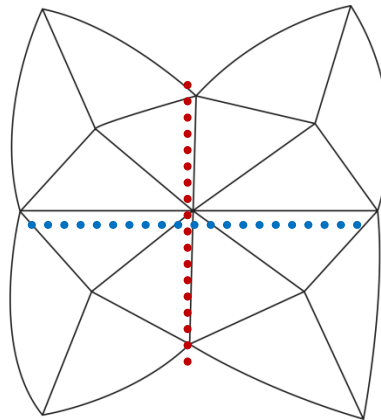
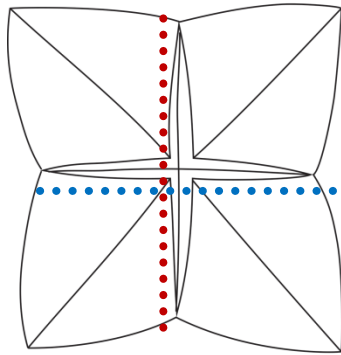
Movements of Origami: Vertical



Movements of Origami: Horizontal

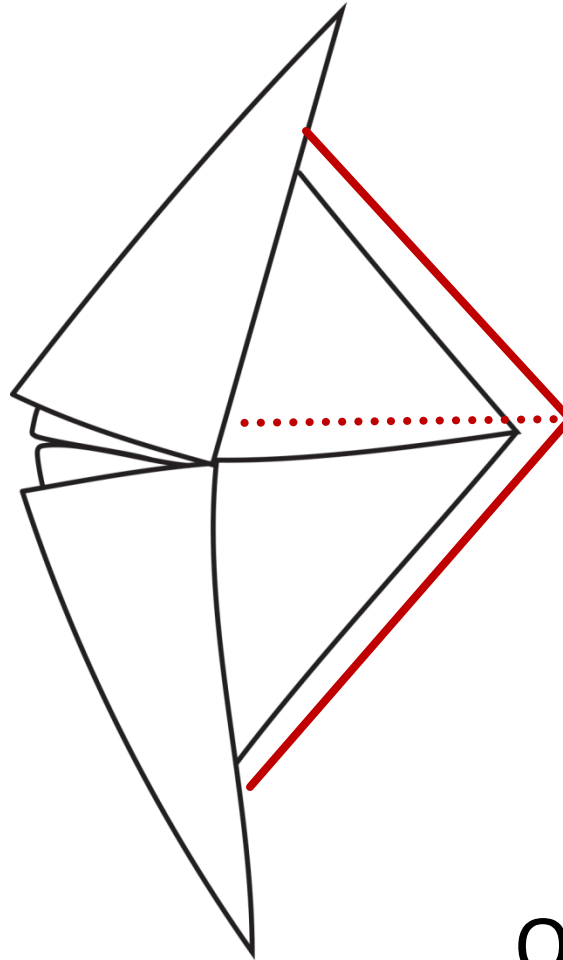


Side View



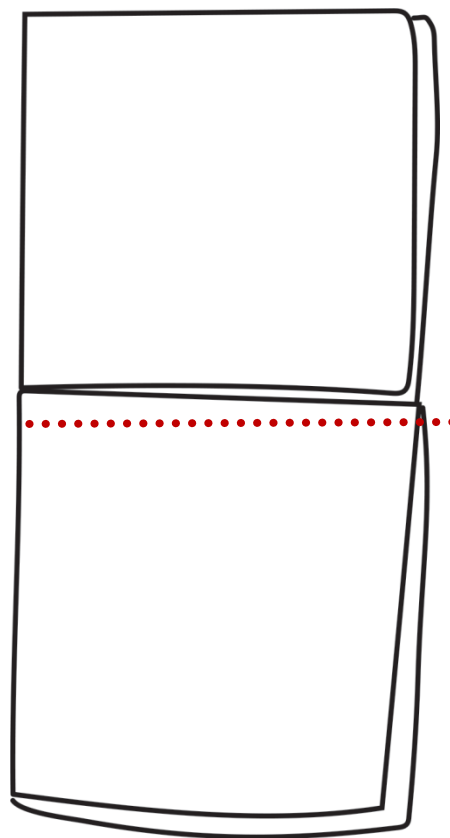
Back View

Mechanism: y-axis



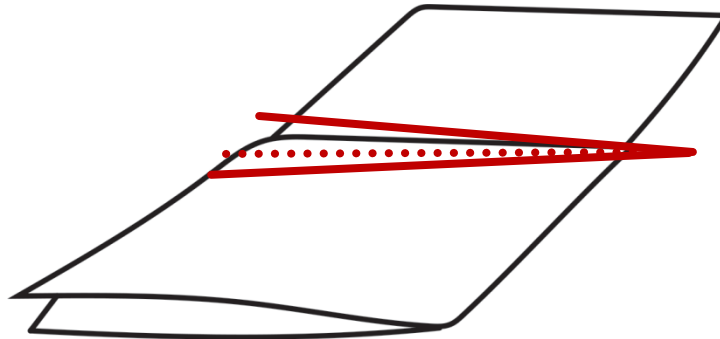
Original Form: 45°

Mechanism: y-axis



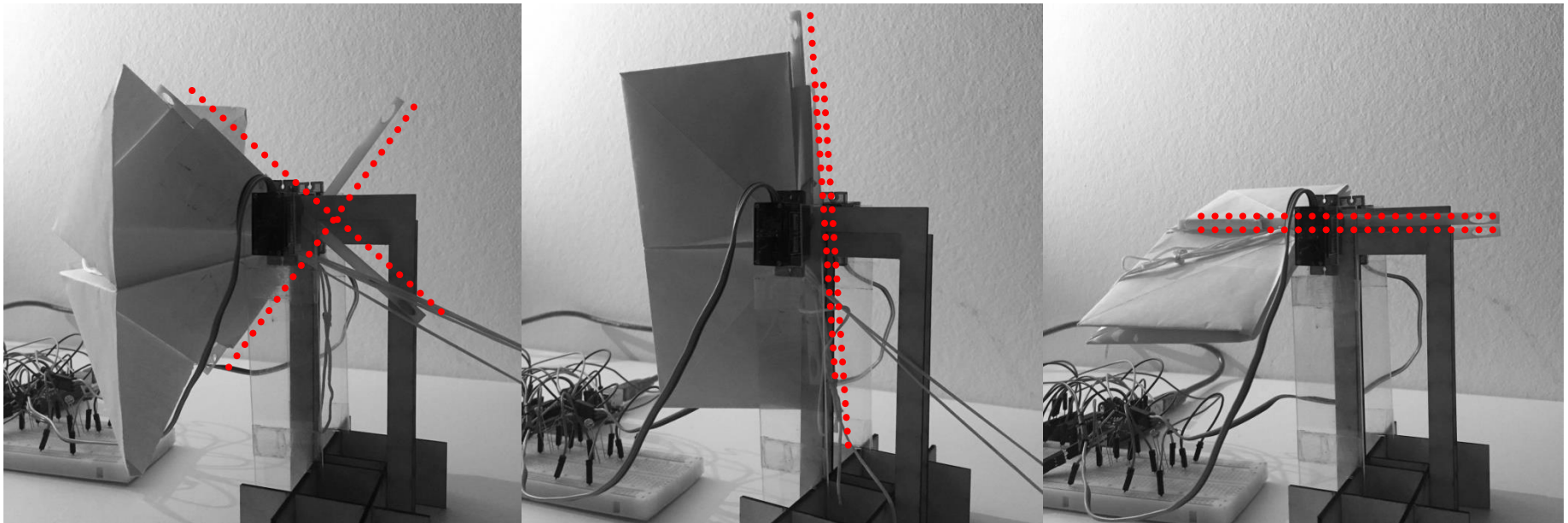
Vertical Form: 90°

Mechanism: y-axis



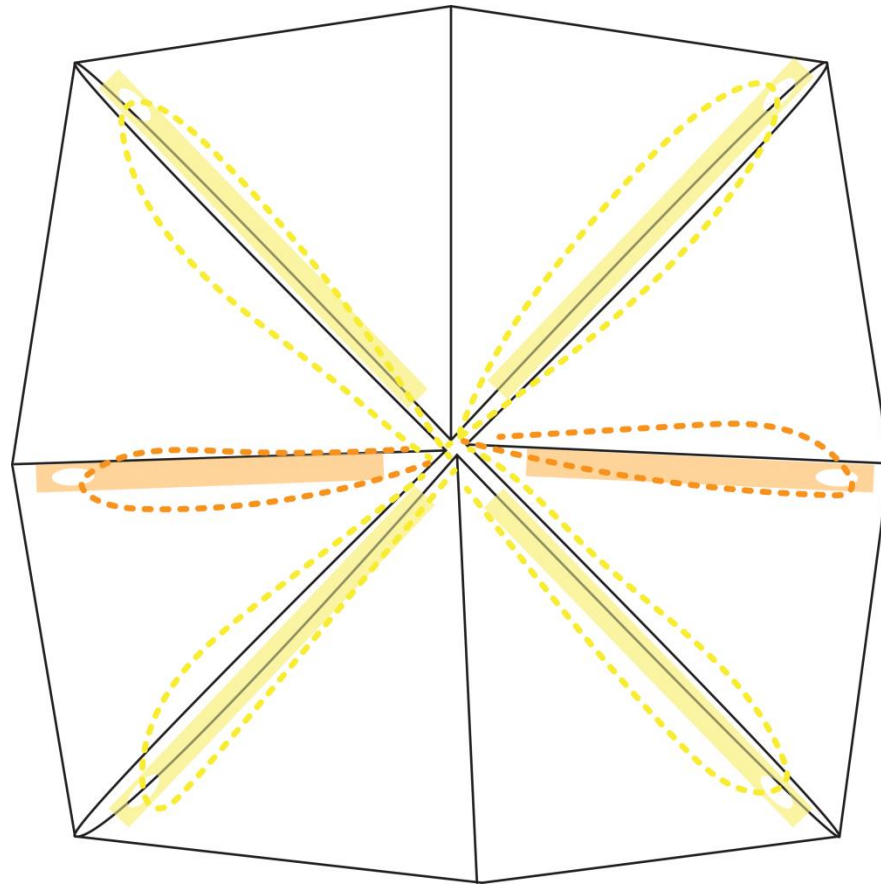
Horizontal Form: 0°

Mechanism

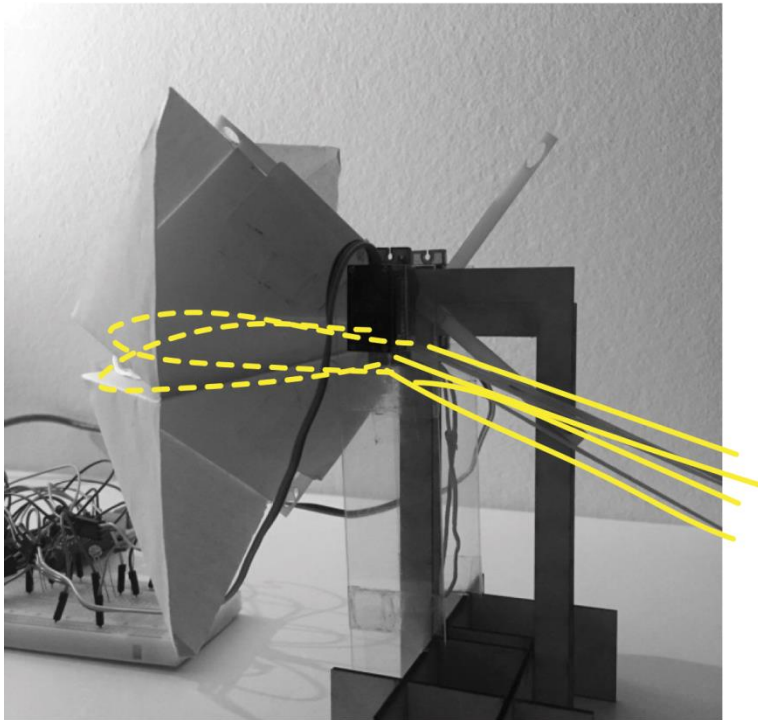


Two supports on y-axis
controlled by two Servo motors

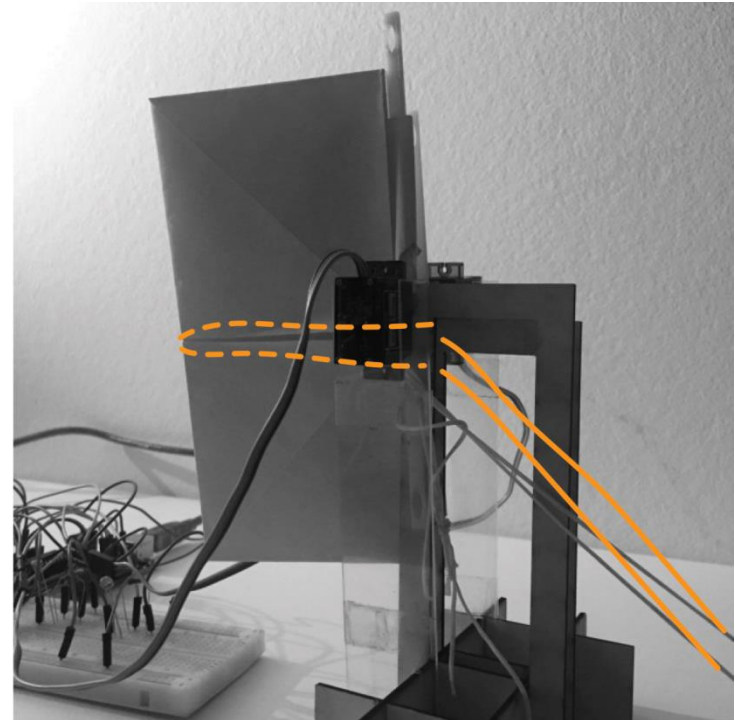
Mechanism: Drawing Strings



Mechanism: Drawing Strings



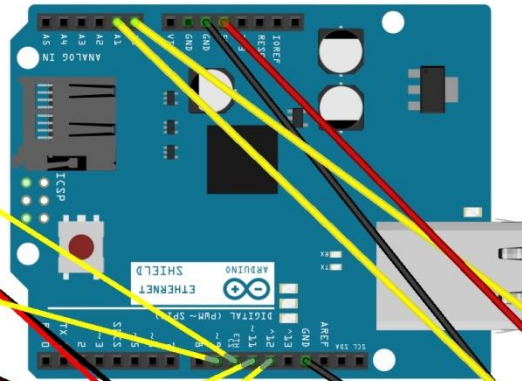
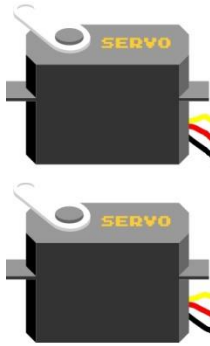
One Servo motor
pulling the corners
of the Original Form



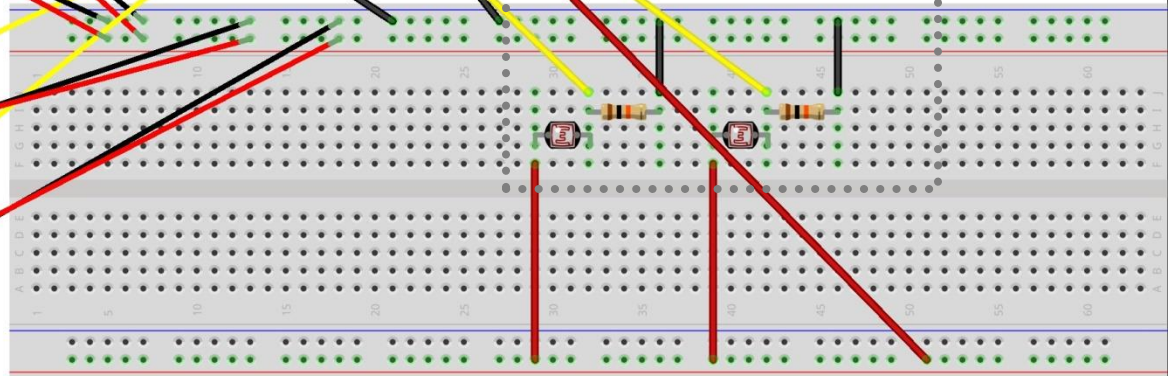
One Servo motor
pulling the sides
of the Vertical Form

Electronics

Two servo motors drawing strings



Two photoresistors controlling movement of origami



Two servo motors controlling supports



Structure

