Process Document

Research
My users are searching or browsing through types of compliant mechanisms.
Research

Challenges

Current compilations of compliant mechanisms are in forms unideal to incorporate new discoveries (e.g. books).

Compliant mechanisms can be categorized in many different ways.

The complex 3D natures of compliant mechanisms makes them difficult to visualize in the static 2D image.

Compliant mechanisms are used in many different disciplines, but it is difficult for them to communicate their discoveries to one another because of the knowledge-separation of their disciplines.

Solutions

My website will allow users to upload new compliant mechanisms to grow the existing database.

My website will support different categorizations of compliant mechanisms.

My website will incorporate more advanced visualization methods of compliant mechanisms than static 2D images.

My website will encourage cross-fertilization of ideas across disciplines by giving examples of compliant mechanisms’ uses in various disciplines.
Users will be able to easily and intuitively find the compliant mechanism they are looking for.

Users will be able to discover compliant mechanisms suitable to accomplish tasks they want to achieve without knowing ahead of time what they are looking for.

Users will be able to easily and immediately understand, at least at a cursory level, how the compliant mechanism works.

Looking through the database will be an interesting and pleasurable experience.
Typical users will include researchers, engineers, designers, teachers, and students in a variety of disciplines including, but not limited to biology, architecture, mechanical engineering, material science, and art. They will use it to find, discover, and learn about compliant mechanisms for use in their work. Currently, they do this by talking to other people using compliant mechanisms, reading papers, or doing internet searches. There is a Handbook of Compliant Mechanisms in print form. These current methods of finding, discovering, and learning about compliant mechanisms do not utilize the full potential of multi-media tools to present and organize these complex mechanisms.
This UI will be available on the internet through a url.
I plan to design a website to be viewed on a computer. The website will be designed at 1366x768
## Persona 1

**Marco**

<table>
<thead>
<tr>
<th>AGE</th>
<th>Hobby</th>
<th>Familiarity with Technology</th>
</tr>
</thead>
<tbody>
<tr>
<td>30-40</td>
<td>Origami</td>
<td>Medium</td>
</tr>
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<table>
<thead>
<tr>
<th>Job</th>
<th>Favorite Website to Waste Time On</th>
<th>Favorite New Thing</th>
</tr>
</thead>
<tbody>
<tr>
<td>Architect</td>
<td>Arch Daily</td>
<td>Touch Screen Laptops</td>
</tr>
</tbody>
</table>

Marco is an architect at a large architecture and engineering firm in San Francisco. His job at the firm is focused on facade design. He frequently struggles with the problem of shading curved building forms. He has heard about the use of adaptive facades in architecture lectures and online articles and is thinking of trying to incorporate them in his next project.
**Research**

## Persona 2

**Dave**

<table>
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<th>AGE</th>
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<tr>
<td>Job</td>
<td>Mechanical Engineering Ph. D Student</td>
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<tr>
<td>Hobby</td>
<td>Making extravagant rubber band guns</td>
</tr>
<tr>
<td>Favorite Website to Waste Time On</td>
<td>Reddit</td>
</tr>
<tr>
<td>Familiarity with Technology</td>
<td>High</td>
</tr>
<tr>
<td>Favorite New Thing</td>
<td>Quadcopters</td>
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</tbody>
</table>

*Dave is a mechanical engineering Ph.D student at UC Berkeley. He is working in a lab researching wing design for small flying robots. His professor wants him to look into a collapsible wing design, and he has started by contacting other researchers his professor recommended he look into.*
Margaret is an assistant professor of biology at Stanford specializing in plant biomechanics. She is doing research into the opening and closing mechanisms of certain lilies. She has been analyzing the plant and trying to simulate its motion using various 3D models.
Marco is looking for ideas for mechanisms to use in an adaptable facade design.

1. He navigates to the Compliant Mechanisms database from his desktop computer at work.
2. He browses to the Architecture-Facade category of the Application-based search feature.
3. He scrolls through images of various compliant mechanisms being used in architectural facades.
4. When he finds one he likes, he clicks on it and is taken to a page featuring information about the compliant mechanism.
5. He watches a short video of the mechanism, orbiting and zooming through the animation to get a closer look.
6. He downloads the Grasshopper/Kangaroo file to adapt to his project.
Create a user flow for one of your personas.
This website should give the user a sense of discovery and satisfaction at having found what they’re looking for, like when you’re searching for that thing, but don’t quite know what it is until you see it. It should provoke a sense of clarity, relief, recognition, and satisfaction.
Satisfaction

Frustration

Compliant Mechanisms Database

Interface Aesthetics
Spring 2015

Elizabeth Prescott & Kimiko Ryokai