Project Proposal Ideas

This week you will propose and explore project ideas. Through brief presentations students will pitch project ideas as well as market their skills. Specifically, students should address the follow points in presentation format:

1. Your project(s) vision
2. What you can individually contribute to the project
3. What skill-sets and resources are needed for the project

If you have already assembled or partially assembled a team, then please present as a group. This is an opportunity for you (or your group) to receive feedback on your project ideas, recruit team members, or align your skillsets or project vision with other students. If you are very passionate about a project, take this as an opportunity to convince others it is worth working on. Besides staff and class feedback on your project ideas, we will provide time at the end of class for students to mix and discuss collaborations.

Some sample project ideas include:

- Mechanizing an interesting origami structure (e.g. the hyperbolic paraboloid discussed in lecture)
- Creating a software tool that facilitates mechanism design by assisting or automating the transformation of 2D wireframe concepts to 3D virtual mechanisms (useful features include accounting for material thickness, hinge dimensions, clearances and interferences).
- Creating a software tool that takes a 3D virtual mechanism and automates its physical production for a particular fabrication method (e.g. 3D printing or laser cutting fabrication processes)
- Exploring origami as a construction technology by developing methods to make mechanisms out of folding sheets
- Develop methods for actuating origami through external mechanisms, embedded actuation, and/or self-folding processes (e.g. hydrofold)
- Take one or more geometric techniques for transformable mechanisms as presented in the lectures and explore/extend the limits of possible forms and movements through software simulation, physical prototyping, and/or mathematical algorithms.
- Develop algorithmic and mathematical tools for designing broad families of mechanisms, and use them to design and demonstrate new specific mechanisms.

Submission Details:

Proposal slides must be submitted in **PowerPoint** (*.ppt* or *.pptx*) format to the TA (andy@csail.mit.edu) by 12:00 pm on March 11th. This is a firm deadline. Submitting past this point will mean you are unable to present. PowerPoint is freely available to students through

MIT: http://ist.mit.edu/powerpoint. Submit all linked video files in addition to your PowerPoint file (this includes all embedded videos from websites).