CMSC 838G
Introduction Rapid Prototyping Techniques

Future interactive devices from IDEO

François Guimbretière

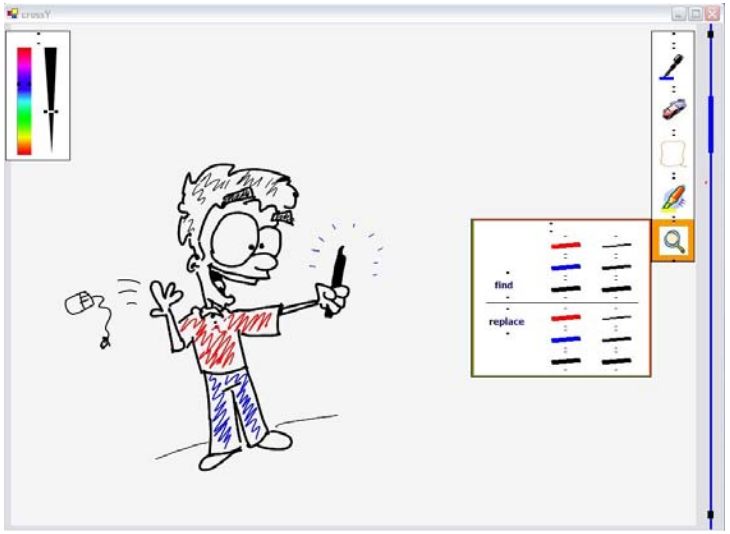
CSIC 3120 Tue-Thu 2:00 - 3:15

CMSC 838G Administrivia

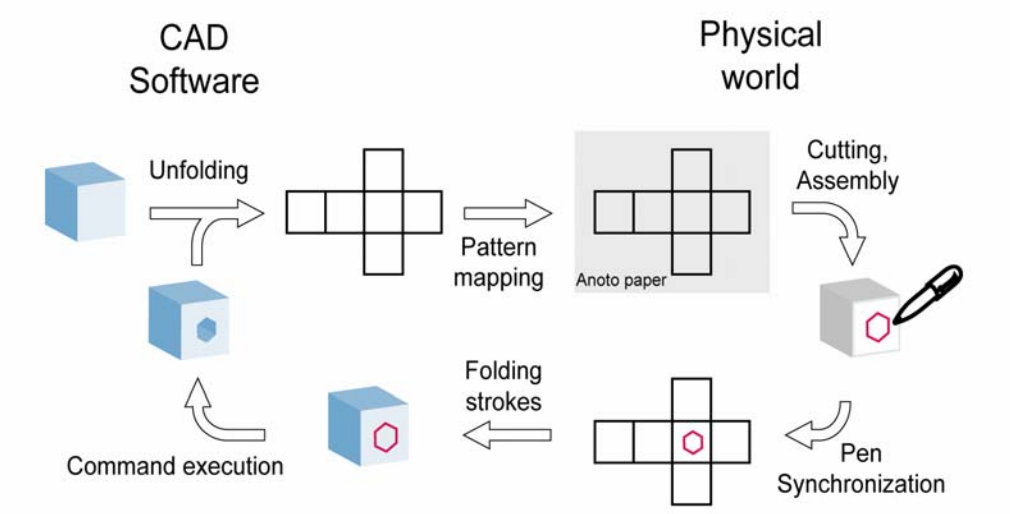
- Instructor
  - François Guimbretière
    - *Human computer interaction*
      - Paper based computing
      - Pen based interactions
      - Information Visualization
    - *Office hours (Room 3267 AVW):*
      - Tue/Thu 10:00am – 11:00am
      - *or* by email any time: francois@cs.umd.edu
      - *or* by appointment

Sample projects

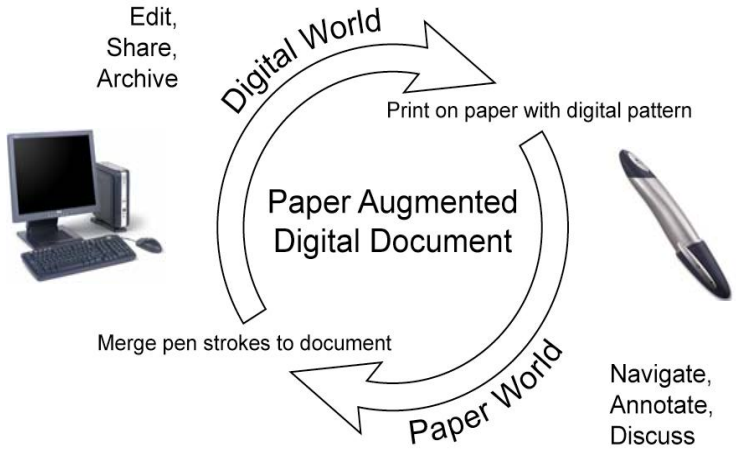
Stanford Interactive Mural



CrossY



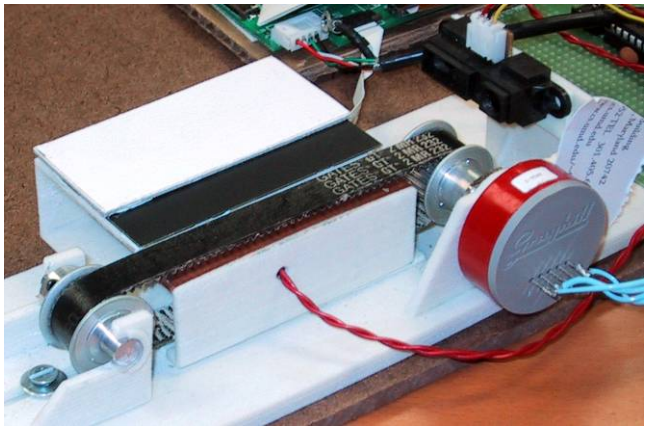
ModelCraft



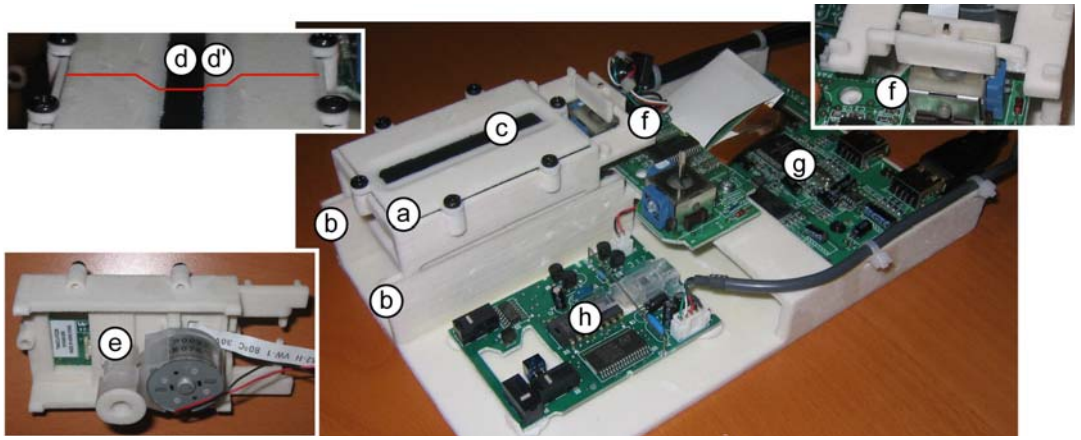
PADD/PapierCraft

Sample prototypes

Stanford Interactive Mural



Hardware scrollbar #2



Hardware scrollbar #1

Student info

- Name, e-mail
- Are you taking the class for credit?
- Why are you taking the class?
  - Goals
  - Topics you would like to be covered in the class
  - Projects you have in mind
- Background?
- Additional comments

What you will learn

- How to get started
  - Understanding the problem at hand;
  - Finding possible solutions and selecting good solutions;
- Rapid prototyping techniques
  - Building low fidelity prototypes;
  - Building medium fidelity prototypes with a laser cutter;
  - Building high fidelity prototypes with a 3D printer;
- Using micro-controllers
  - Programming
  - Sensors and Actuators
  - Producing a printed circuit board (PCB)
  - Testing

How you will learn

- By doing (and reading)!
  - Show and Tell exercises
- By participating
  - Sharing your experience with others is very important
  - Creation of "How to…" pages
    - *Use for the Undergraduate version of the class*
    - *Use for the "Invent the Future" teams*
- By collaborating
  - Show and Tell
  - Projects are group activity
    - *Be sure to have group members from different background*
  - Make good use of office hours

Work load

- Reading
  - Manuals, textbooks and papers
  - ~ 2 papers per class
  - Readings are considered understood if no questions are asked
- In class presentation and discussion
  - Heavy participation is expected
  - Project presentations
- Show and Tell
  - Small hands-on homework
- Project
  - 1 project, 3 checkpoints
  - Project proposal due Sep 12

Resources available

- 3D printing
  - ZPrinter 310
- Laser cutter
- Electronic lab
  - PCB production
  - Mixed signal oscilloscope
  - Micro-controller programming station

How you will be evaluated

- 30% Participation
- 70% Final project

- Check the syllabus about academic Honesty

Texts

- Texts used during the class
  - Books will be available in the CS library or online when ever possible

- Course web sites:
  - http://www.cs.umd.edu/class/fall06/cmsc838g/