Human-Computer Interaction

Project Introduction

Professor Bilge Mutlu

Recap of *Module 3: Project*

General Outline (Recap)

We will carry out a semester-long research project where you will connect and practice the **seminar** and **methods** modules.

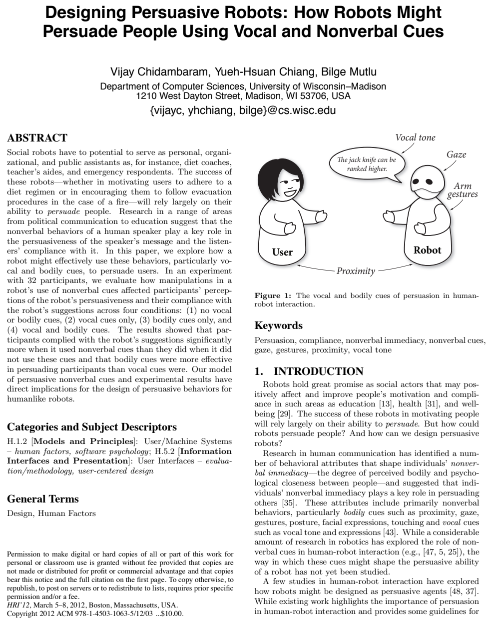
- We will use the last 30 minutes of class on Mondays and time left on Wednesdays to discuss project goals, steps, deliverables
- Feedback during office hours, through deliverables
- Individual or pairs, expectations are different
- 30% of your total grade

Project Deliverable (Recap)

We will incrementally write a four-to-six-page paper potentially submittable to an HCI conference.

» **Individuals:** 4 pages

» **Pairs:** 6 pages



Designing Persuasive Robots: How Robots Might Persuade People Using Vocal and Nonverbal Cues

Vijay Chidambaram, Yueh-Hsuan Chiang, Bilge Mutlu

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Is cheating a human function? The roles of presence, state hostility, and enjoyment in an unfair video game

J.J. De Simone, Tessa Verbruggen, Li-Hsiang Kuo, Bilge Mutlu

Handheld or Handsfree? Remote Collaboration via Lightweight Head-Mounted Displays and Handheld Devices

Steven Johnson, Madeleine Gibson, Bilge Mutlu

--Preprint--

A Motion Retargeting Method for Effective Mimicry-based Teleoperation of Robot Arms

Daniel Rakita, Bilge Mutlu, Michael Gleicher

Chidambaram et al., 2012

(137 citations)

De Simone et al. 2012

(11 citations)

Johnson et al., 2015

(36 citations)

Rakita et al., 2017

(22 citations)

Project Topics (Recap)

We will take inspiration from last year's best-paper-award winners at CHI and choose a topic following the algorithm:

```
Skim a set of papers
Focus on 2-3 based on interest/research style
Read related work to understand gap
Read what the paper did to understand where it fits
Determine what else remains unexplored from limitations
Zoom out, choose topic, find partner (optional)
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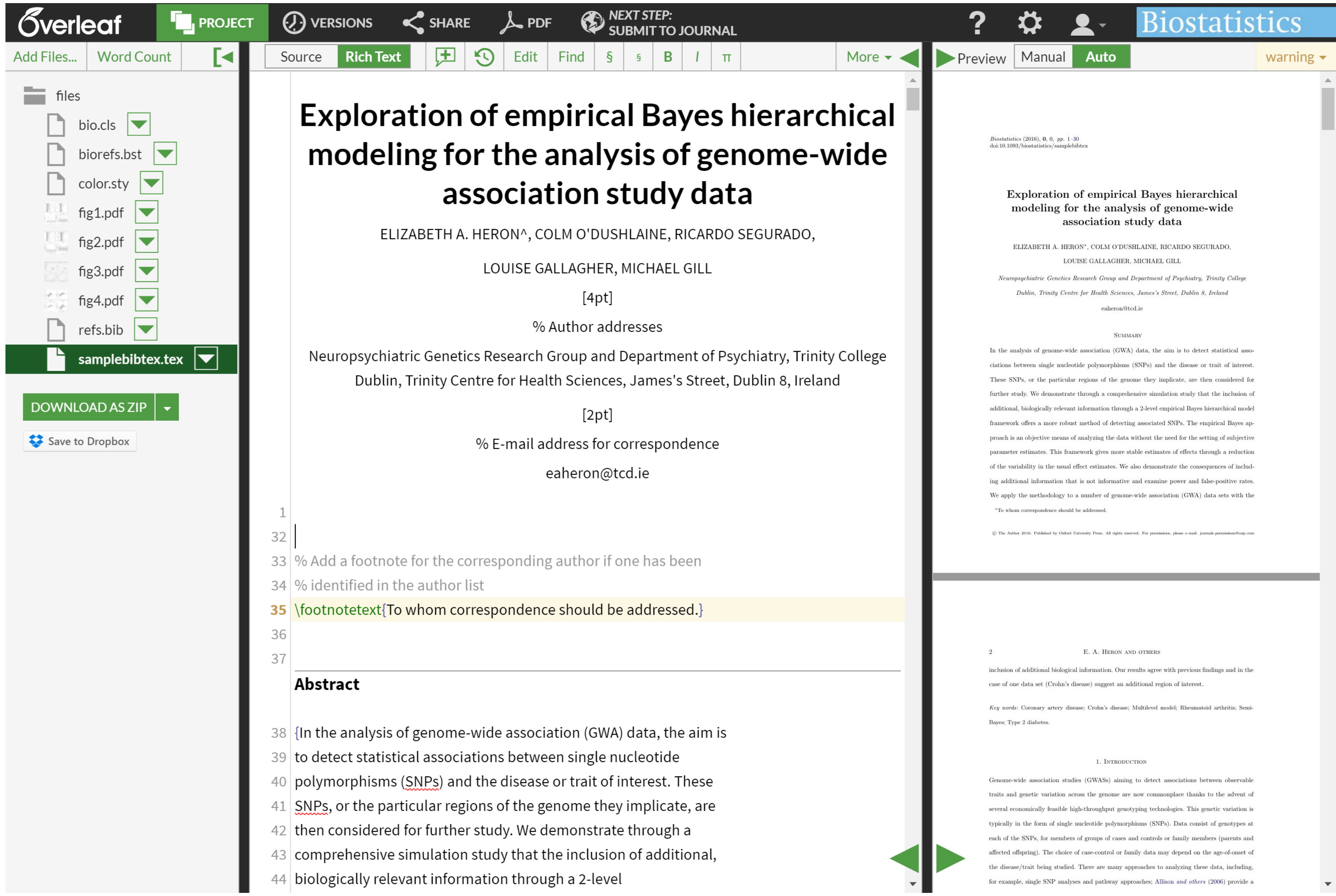
Project Deliverables (Recap)[11]

- Project Topic
- Literature survey, RQs
- Method
- Data
- Analysis, results
- Final paper



[11] Image source

Why are we doing this? (Recap)

- Practicing research with different levels of uncertainty
  - **Hands-on activities**: controlled, structured, short
  - **Assignments**: semi-controlled, semi-structured, medium
  - **Projects**: uncontrolled, unstructured, long
- This might feel redundant, but redundancy is often good!
- Bridging the seminar and the methods, contextualizing the methods within the seminar topics

What's Next?

We'll execute the algorithm

1. Skim a set of papers
2. Focus on 2–3 based on interest/research style
3. Read related work to understand gap
4. Read what the paper did to understand where it fits
5. Determine what else remains unexplored from limitations
6. Zoom out, choose topic, find partner (optional)

1. Skim a set of papers

- Paper award winners from CHI 2019
- Available at the ACM Digital Library
- Copied in Google Drive folder

2. Focus on 2–3 based on interest/research style

- Skim the titles and abstracts and see what looks interesting
- Look for what type of research: *systems/studies*, *qualitative/quantitative*, etc.

3. Read related work to understand gap

- The anatomy of an HCI paper
  - Introduction/problem formulation
  - *State of the art*, *gap*
  - Method, findings
  - Discussion, recommendations

4. Read what the paper did to understand where it fits

- Ask the question:

  What did the paper do to close the gap?

- Create a map of knowledge in this area, including the what the paper did

5. Determine what else remains unexplored from limitations

- From the map you created, find remaining gaps
- Problems worth studying must be:
  - Not studied/understudied
  - Significant/impactful
  - Pervasive/frequent
  - Persistent

6. Zoom out, choose topic, find partner (optional)

» Outline a portion of the remaining gap for your study

» Make sure that it is *nontrivial* but *feasible* to do in a semester

» You can use Piazza or in-class discussion next week to find a partner

Questions?