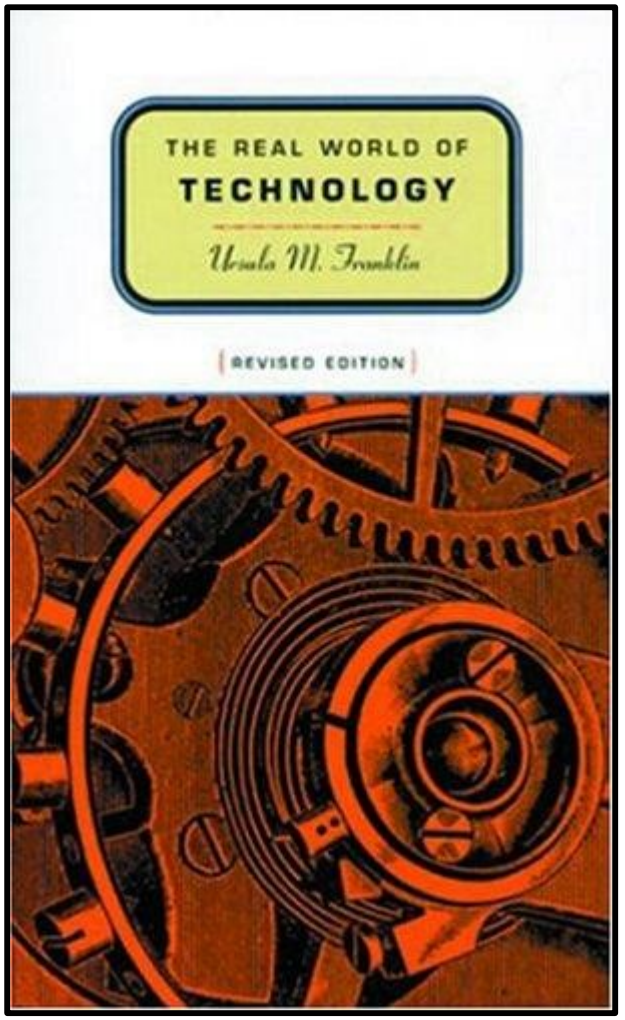
Responsible Recommendation

MICHAEL D. EKSTRAND
People and Information Research Team
Dept. of Computer Science, Boise State University

© 2017 Michael Ekstrand. All rights reserved.

The Real World of Technology

Ursula Franklin's 1989 Massey Lectures



Technology is not just artifacts.

- It is process
- It affects people
- It was designed by human action

BAM | BOISE ART MUSEUM VISIT ART

Home / Read / Twenty Ten Idaho Triennial: Sustain + Expand

Twenty Ten Idaho Triennial: Sustain + Expand

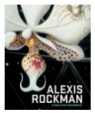
Category: Read.

Description

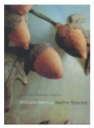
Product Description

Exhibition Catalogue
BAM Publications
Softcover $19.95 plus shipping and handling

Related Products



Alexis Rockman: A Fable for Tomorrow



William Morris: Native Species, The George R. Stroemple Collection

MORE BOISE STATE UNIVERSITY

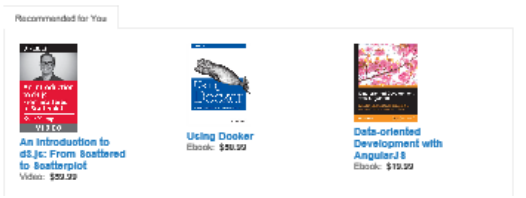
Four ways Boise State is upending college education

Nursing research being done at BSU leads to better outcomes, care

Nancy Napier: The search is still on for remains of U.S. soldiers in Vietnam

What will a materials research center mean to BSU?

Record Micron donation of $25 million could help make Boise State a 'top-tier' materials science center



The Post Recommends

Which of the 11 American nations do you live in?

A fascinating new look at the cultural differences between the 11 nations that make up North America.

More From CBC Radio

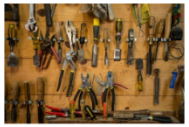
THE CURRENT
Ben Bernanke: An insider's account on the global financial meltdown

THE 180
Food Security: Is it better to 'eat local' or global?

AS IT HAPPENS
Massachusetts man selling autumn foliage for $19.99

In graphic d 'heavy overt room

Journal editors physician affilia call.



New York's didn't let th

This belongs in the someone-is

App top charts & categories Game top charts & categories Featured

Picks for you

Show all

NPR One
★★★★☆
Free

Solitaire HD
★★★★☆
Free+

GOM Player App
★★★★☆
Free

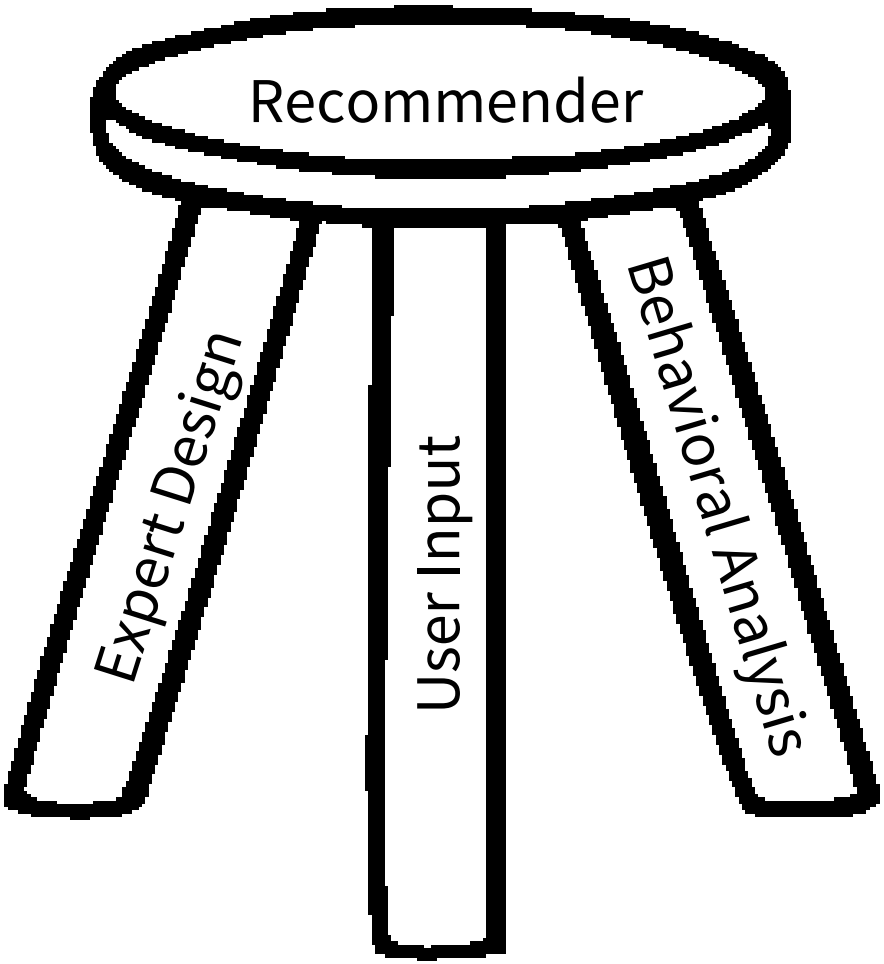
Mahjong Deluxe Free
★★★★☆
Free

Code Writer
★★★★☆
Free

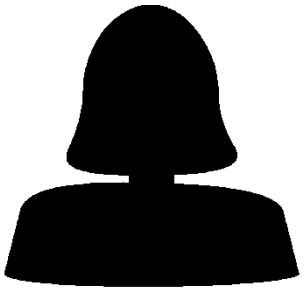
Key Questions

Who is involved in designing and evaluating our systems?

What is these systems' impact?

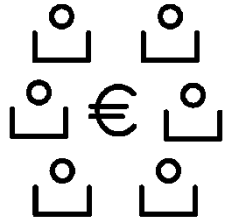

Recommender
Expert Design
User Input
Behavioral Analysis

Who Benefits from Recommendations?

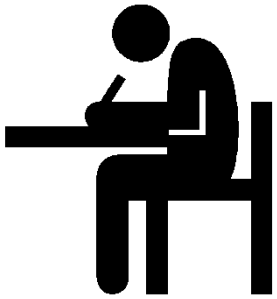


Created by Aleksandr Vector
from Noun Project

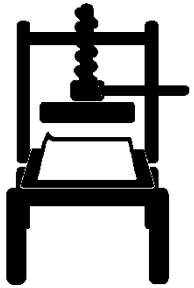
Created by Gan Khoon Lay
from Noun Project



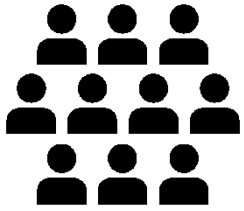
Created by anbileru adaleru
from the Noun Project



Created by Luis Prado
from Noun Project



Created by Michael Wohlwend
from Noun Project



Created by Andrea Nobis
from Noun Project

Whose voices are in the design process?

Example: Meeting User Information Needs

Problem: naïve statistics over user base emphasizes largest group of users

→ Minority groups might get worse results!

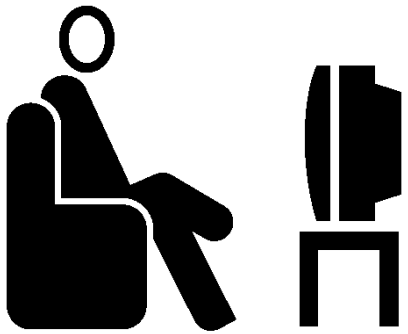
Solution: measure results for each group

Mehrotra et al., 2016 – Microsoft Bing

Example: Limits of Behavioral Observation

Neil Hunt, RecSys ‘14 keynote:

NetFlix’s metrics cannot distinquish between an enr *liction.*



Created by Jems Mayor
from Noun Project

Intention-Behavior Gap

Problem: users say one thing and do another

Old problem: Paul in 1st century said ‘What I want to do, I don’t do; what I don’t want to do, I do.’

- They do not truly understand their desires.
- They are not satisfied with their actions.

Which is true?

Opportunities for Recommenders

If we know a user's **goals** *and* their **behavior**, maybe the recommender can help!

- Find 'baby steps' that are:
  - Likely to be adopted (behavior helps here!)
  - Closer to user's goals (their input necessary here!)

- Persuasive computing has **how**, but recsys can do more for **what**.

Difficulty

Ride down the block
Ride the Boise Greenbelt
Ride to Lucky Peak
Boise Half-Century
Sawtooth Century (100mi in western ID)
Zion Nat'l Park 200 (km)
HHH (100 mi + TX + August)
Yellowstone / Grand Teton 600
Colorado High Country 1200

Rasch Scale

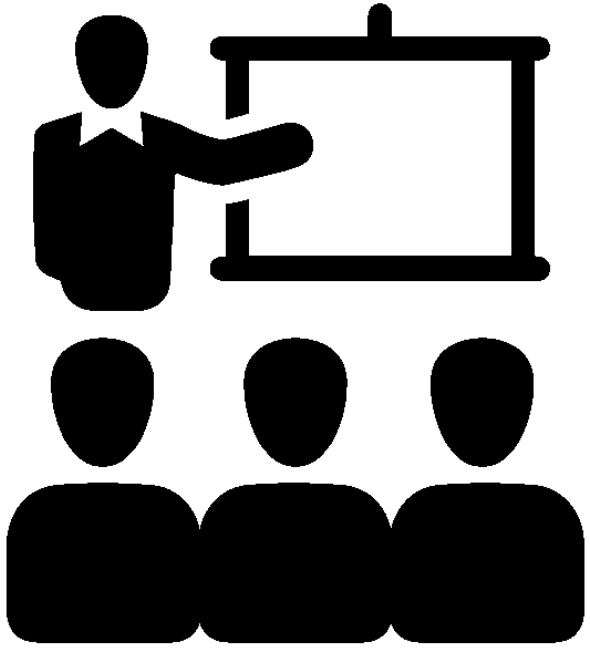
easier

harder

Bicycle by Andrew Jones on The Noun Project. Used under CC-BY.

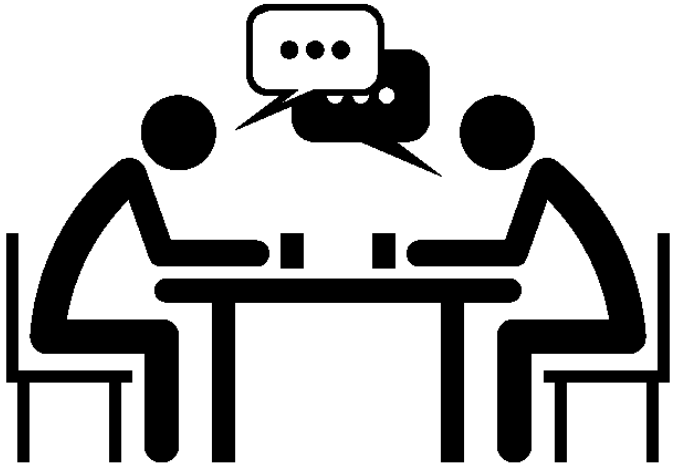
Reciprocity (Franklin, 1989)

Broadcast …



Created by Delwar Hossain
from Noun Project

… or conversation?



Created by Michael V. Suriano
from Noun Project

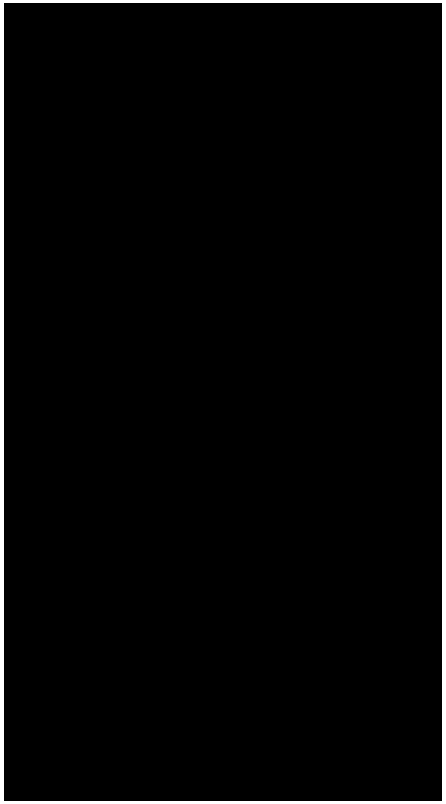
Giving Users a Voice

Participatory design provides a framework for incorporating user voices into the design process.

- How do we scale it?
- How does it apply to advanced algorithms?

Transparency lets users know whose voices are being incorporated and how.

Promote Clickbait



Crash by Myly from Noun Project
Neck Turn by Gan Khoon Lay from Noun Project
Analogy by Ev Williams, contextualized by Bibblio.org https://goo.gl/AIZNIy

Reinforce Biases

Does the system propagate existing social biases?

How does this affect users?

Or content creators?

Rob Speer; https://goo.gl/13Ss1p

Fajitas, by stu_spivack. CC-BY-SA 2.0.

What's Missing?

A lot of work to do!

- How do we measure these things?
- How can we scale participatory design?
- What does participatory design of algorithms even look like?
- How can we use intention-behavior gap to build compelling recommender experiences?
- How can we provide *meaningful* control over the recommendation process to users?

What We Get

What is the impact of your system?

What will you do about it?

Michael D. Ekstrand

People and Information Research Team

BOISE STATE UNIVERSITY

https://goo.gl/G1DK38