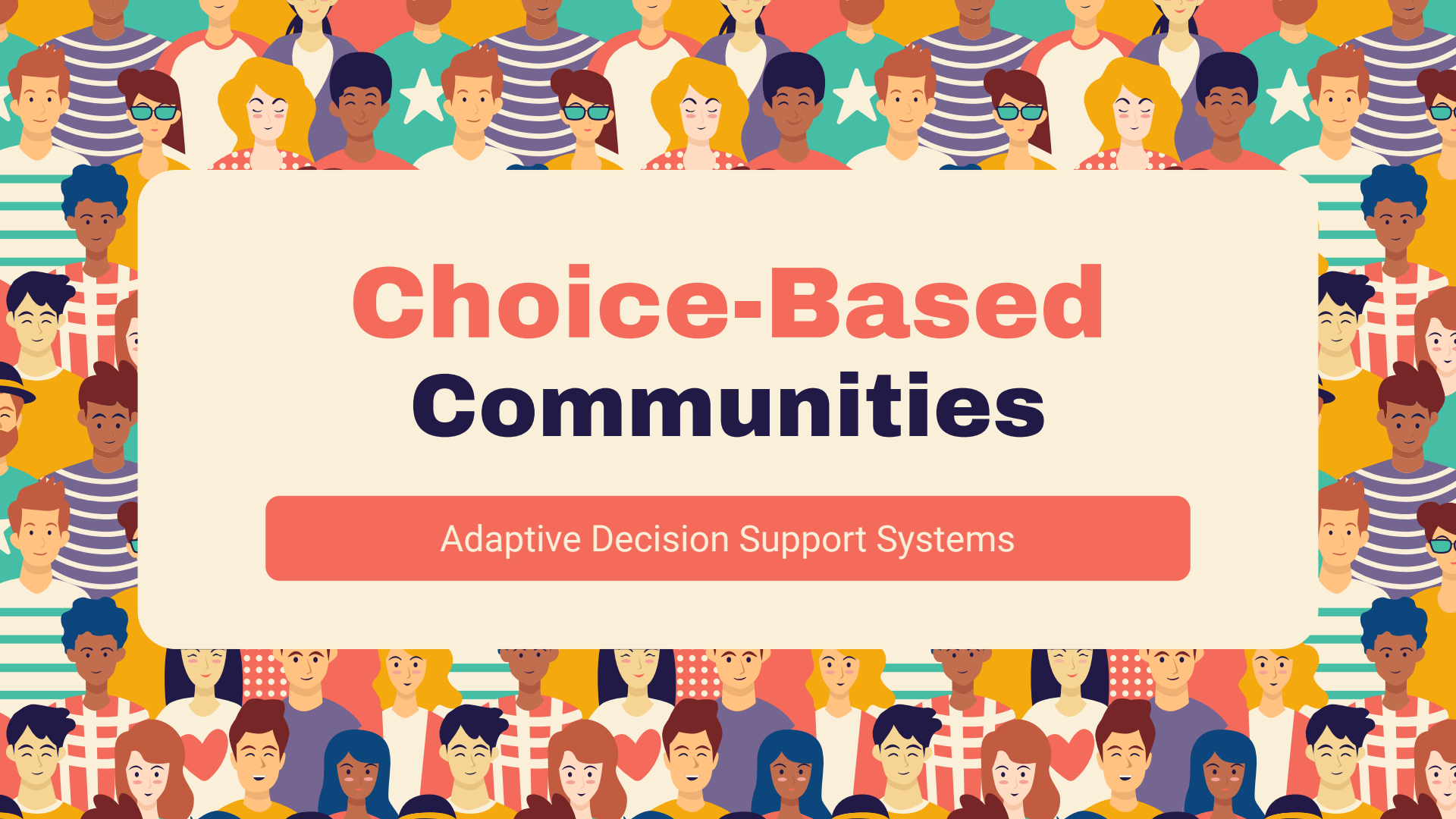




Choice-Based Communities

Adaptive Decision Support Systems



A reality check

Man is **by nature a social animal**; an individual who is unsocial naturally and not accidentally is either beneath our notice or more than human. **Society is something that precedes the individual.** Anyone who either cannot lead the common life or is so self-sufficient as not to need to, and therefore does not partake of society, is either a beast or a god.

Aristotle, *Politics*, 1253a.



How do we form communities?



Organically*

Structures: Schools, neighborhoods, workplaces, breweries, karaoke bars

Mitigators: demographics, common acquaintances, shared interests, a love for NE-IPA, pheromones

Pre-Mitigators: serendipity, social class*, geographical location



Algorithmically

Structures: Social media platforms, dating apps, messaging apps, boards and forums

Pre-Mitigators: collaborative recommenders (many users' preferences to recommend items* to user) and content-based recommenders (locate elements similar to what user liked in the past)



Table of contents



1

What's missing?

How are we failing to effectively translate mitigators, algorithmically?

2

What are preference-based communities?

How can we effectively translate such mitigators in our chosen context?

3

What's been done?

Some existing social recommenders and à bit of theory on social recommenders.

4

What are we doing?

Walkthrough of study, a sneak peak into scales, experimental conditions, analysis within ARCADE.

5

Questions, Wishes, Wonders

Wishes and wonders around aspects of community building to explore, types of algorithms to use, research methodologies.

6

What can you do?

How would you address some of the issues above? What are your musts? Contextually.



1

What's missing?

The “why”.





“‘Identity’ [...] is a ***shibboleth***: a device used to decide who is in and who is out; who is us and who is them; **who is likely to be a good customer and who is not**; who is allowed to pass the border and who is not. Shibboleths are constituted by “every insignificant arbitrary mark [...] as **that difference becomes discriminative, decisive and divisive**”.”

— **De Vries (2010)**





Big “i”, little “I”



The **social identity model** of de-individuation postulates that identity expression involves two components:

- **cognitive component:** level of self-definition that is salient in a given context
- **strategic component:** concern that identity expression be contextually appropriate. It implies sensitivity to the nature of the audience addressed and its power of sanction. Barreto et al.(2003)

In the case of algorithmically supported identity exploration, towards community building, **what shibboleths should take precedence?**

6



What are choice-based communities?

The “What”.



Main tenets



Use algorithms to form groups

No pre-definition, ad-hoc, personalized, preference based



Preference modeling

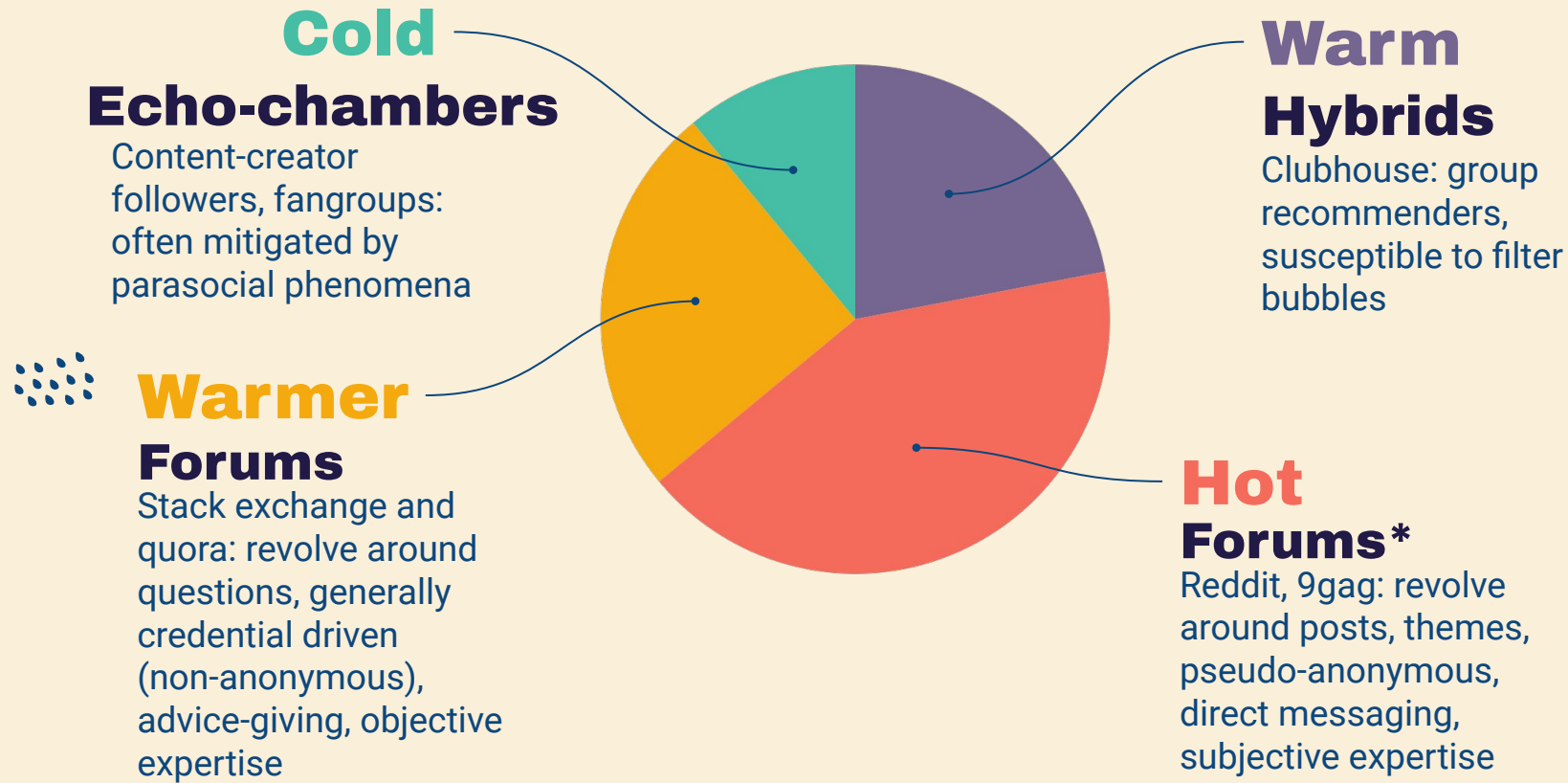
Recommender systems do not model users' preferences, rather it creates a preference model in order to predict specific preferences.



ARCADE Evaluation

Evaluated for ability to induce preference construction through discussion, "by reinstating the social and intellectual benefits of active advice-giving practices."

The wheel of communities



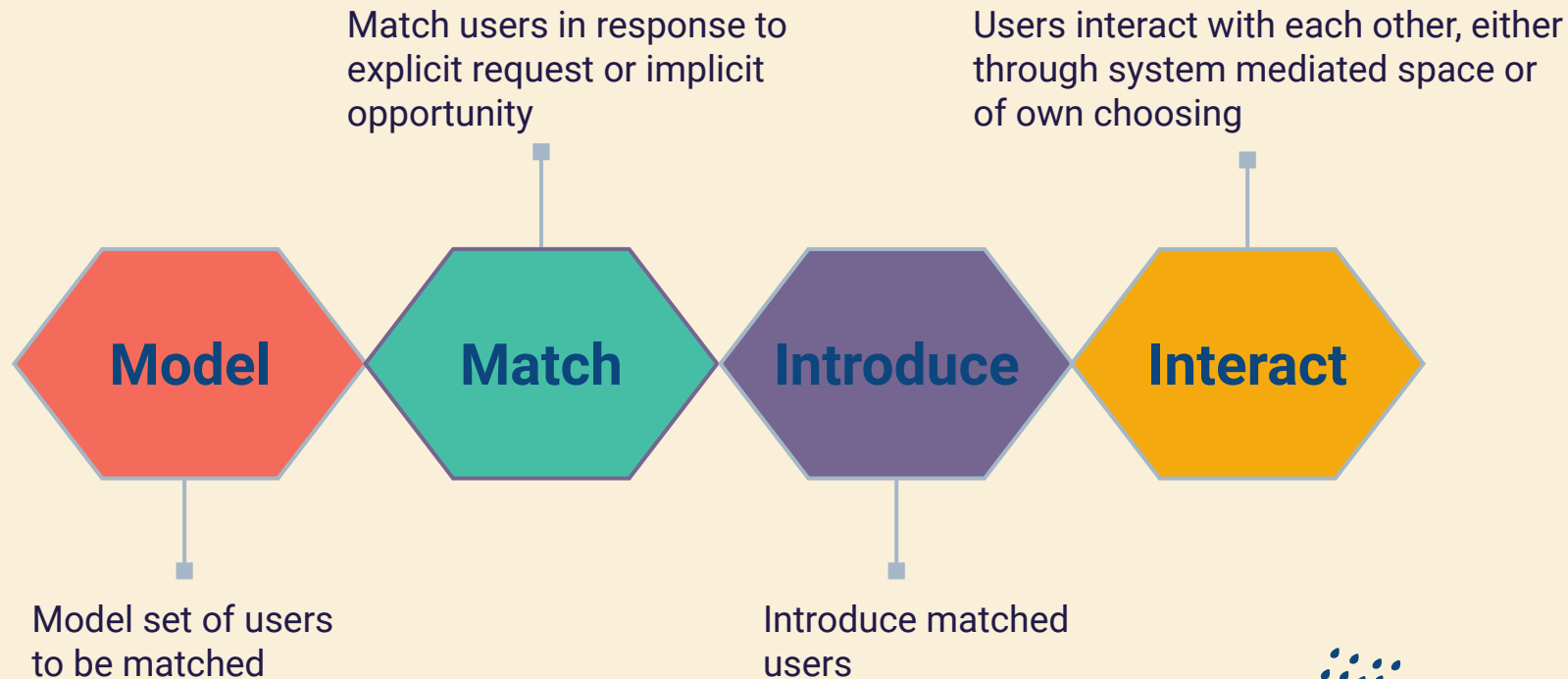
3

What's been done?

The “where”*.



Simple Social Matching Model



Basic considerations

Profiling users

What type of information does a system represent about its users, and how does it acquire this information?

Computing matches

What is the system's model of what makes a good match? How does the system compute matches?

Introduction

How are matching people brought together? What information does the system reveal about the people?

Interaction

To what extent does the system facilitate interaction? Does interaction take place in a mediated space created by the system or do users interact as they see fit, including face-to-face?

Feedback

How does the result of an interaction feed back to the user profiles? Can the system automatically update profiles or is it up to users to provide explicit feedback?

Expertise Recommenders / Support Systems



For small communities, basic assumption: users know recommenders or someone who knows recommenders (direct messaging system).

ReferralWeb



Does not provide any explicit support for the interaction process; users are expected to communicate with the experts at own leisure.



Group Recommenders

Provide information to a predefined group of people.
IE: PolyLens (movies for self-defined groups of movie lovers), MusicFX (selected music for corporate fitness center based on the preferences of the people working out at a given time)

I2I

Builds user profile through retrieving info concerning user's online activity. enables interaction through synchronous chat between groups of users as well as instant messaging between pairs of users.





4 What are we doing?

The “How”.

Study Walkthrough

Consent form,
pre-survey, original
20 movies rating

Step 1



Step 2

Present each user
with 7 advisors



Study Walkthrough

 [Home](#) [About](#) [Contact](#)

RATE MORE MOVIES

☒ My Profile

☒

Advisor Name

Keeping Up with Science is undoubtedly the most important SciFi film of the

TICK

☒

Advisor 2

Keeping Up with Science is undoubtedly the most important SciFi film of the

☒

Advisor 3

Keeping Up with Science is undoubtedly the most important SciFi film of the

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Advisor 4

Keeping Up with Science is undoubtedly the most important SciFi film of the

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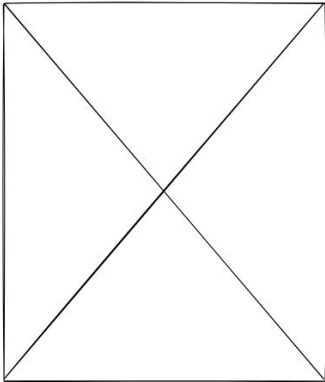
Advisor 4

Keeping Up with Science is undoubtedly the most important SciFi film of the

☒

Advisor 4

Keeping Up with Science is undoubtedly the most important SciFi film of the



Advisor's Recommendation

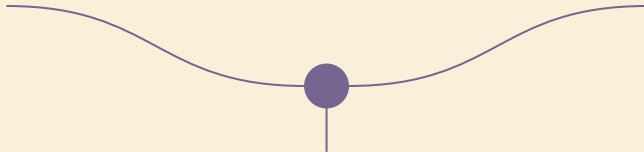
Keeping Up with Science is undoubtedly the most important SciFi film of the last decade; from the plotline to the cast, every element of this project is a masterpiece. This should be the next movie on your list!

☐ ☐ ☐ ☐ ☐

ACCEPT RECOMMENDATION

REJECT RECOMMENDATION

Study Walkthrough



Step 3

After each “Accept”
or “Reject”,
Recommendation
Modal is activated



Study Walkthrough

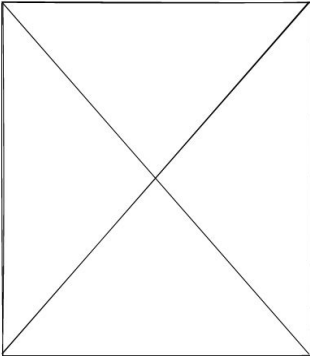
Logo

Home

About

Contact

RATE MORE MOVIES



Advisor's Recommendation

Keeping Up with Science is undoubtedly the most important SciFi film of the last decade; from the plotline to the cast, every element of this project is a masterpiece. This should be the next movie on your list!

☆

☆

☆

☆

☆

ACCEPTED / REJECTED

About Advisor

Advisor likes movies such as "Movie Example rated by user"

Advisor dislikes movies such as "Movie Example rated by user"

Advisor rated movies of "cite genre" the highest

Advisor's top ten movies were "genre" types

Advisor is ambivalent about movies like "movie rated by user"

what do you recommend for Advisor ?

Movie name...

In five sentences or less, explain why Advisor should watch the movie you have chosen

Prompt...

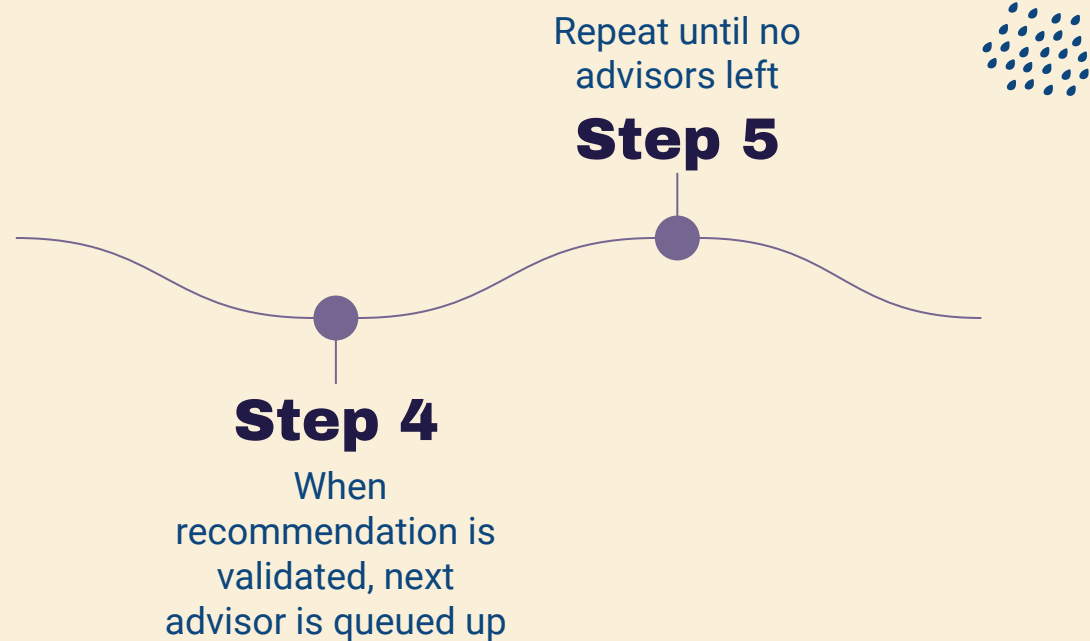
1.....

2.....

3.....

VALIDATE RECOMMENDATION

Study Walkthrough



Study Walkthrough

Logo

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RATE MORE MOVIES

✉ My Profile

Advisor Name

Keeping Up with Science is undoubtedly the most important SciFi film of the last decade...

TICK

Advisor 2

Keeping Up with Science is undoubtedly the most important SciFi film of the last decade...

TICK

Advisor 3

Keeping Up with Science is undoubtedly the most important SciFi film of the last decade...

TICK

Advisor 1

Keeping Up with Science is undoubtedly the most important SciFi film of the last decade...

TICK

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Keeping Up with Science is undoubtedly the most important SciFi film of the last decade...

TICK

Advisor 1

Keeping Up with Science is undoubtedly the most important SciFi film of the last decade...

TICK

OUT OF RECOMMENDATIONS

Thank you for reviewing your advisor recommendations; now you will be asked to recommend back to each advisor.

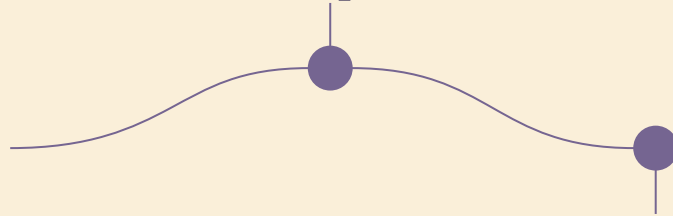
CLICK HERE TO EXIT

Study Walkthrough

Ask which advisor they would accept another recommendation from again {write a little of why}. Which advisor would they give a second chance to.



Step 6



Step 7

Post-Survey



Importance of this study

Example Scales	User's perceived sense of self	User to System	User and Advisor
Scale 1	Movie Expertise Aim: Measure user's baseline frequency of movie consumption	Recommendation Quality Aim: Measure user's perceived recommendation quality	Perceived trust Aim: Measure user's perceived level of advisor's trustworthiness
Scale 2	Curiosity Self-Assessment Aim: Measure user's baseline perceived curiosity	Diversity (advisor) Aim: Measure user's perceive advisor diversity The overall advisor movie recommendations suit a broad set of tastes	Reciprocity Aim: Measure user's perceived levels of reciprocity in advisor/user interaction
Scale 3	Positive downstream indirect reciprocity scale Aim: Measure user's baseline opinion on reciprocity	Choice Satisfaction Aim: Measure user's perceived satisfaction of movies accepted and final movie chosen	Explanation Aim: Measure complexity and nature of recommendation justification

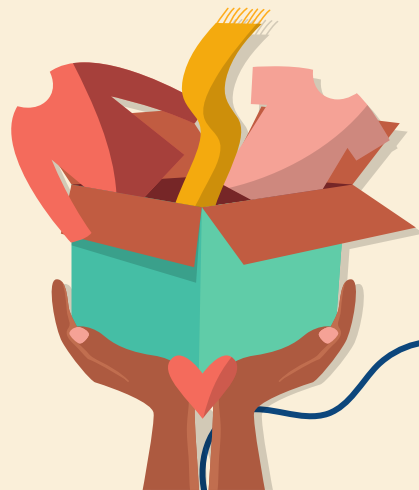
Experimental Conditions



3x3 study design:

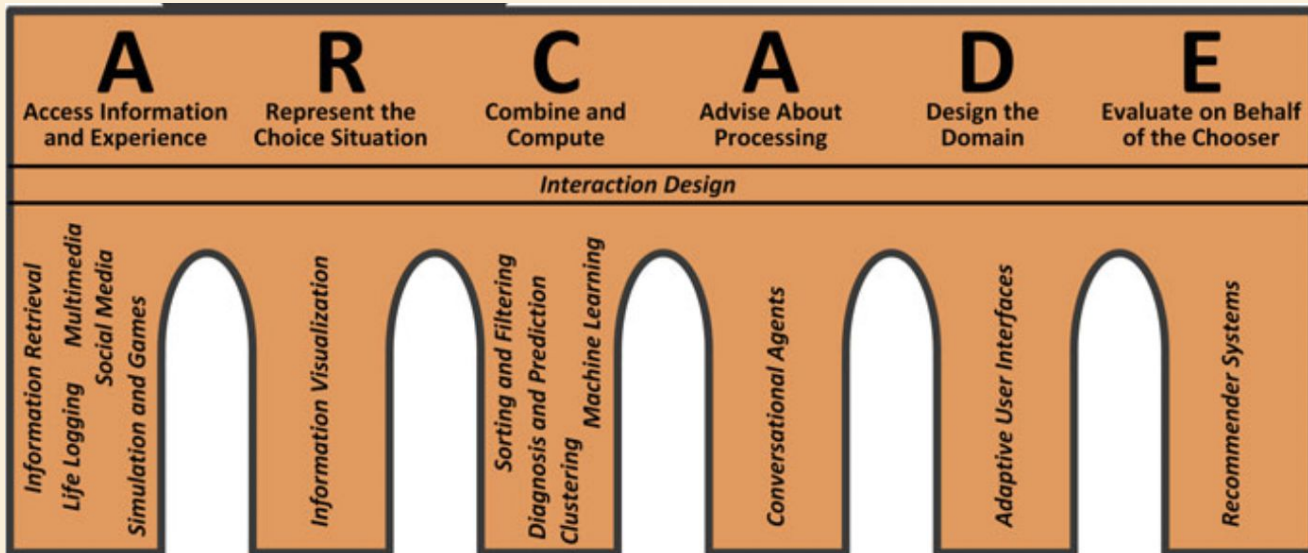
Emotion, Genre and Matrix Factorisation across:

- Low Diversity (no compromise)
- High Diversity(compromise)
- High Diversity (no compromise)



ARCADE Model Analysis

Access and Advise





5 Questions, Wishes, Wonders

The “What If”.

QWW



Q1

In the online community we are looking into, how do we define diverse opinions?



Q2

How do we explore in-group tolerance?



Q3

How can advice giving be structured so to maximize engagement and time spent in the community?

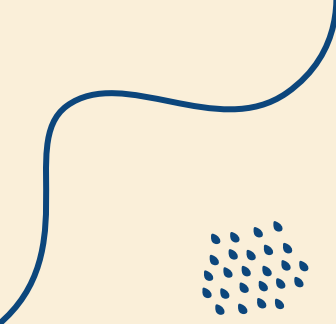
What can you do?



In your class projects

In building **your ideal recommender system for self-actualization** (in the context of your decision tasks and groups):

- What **shibboleths** do you think are primordial in building the recommender system for self-actualization of your choice?
 - What role will **privacy** play?
- How would you **encode** them?
- What's the **matching** process like?
- What's the general **interaction** like? (Human-Machine, Human-Human)
- What's the **feedback** system like?
- How would you address some of the **limitations** mentioned above?
- What do you think should be **avoided** when building recommender system for self-actualization?
- What are your **musts**?
- What are the **affordances** of the system?



Thanks!

“We become what we
behold. **We shape our tools
and then our tools shape
us.**” - Marshall McLuhan

