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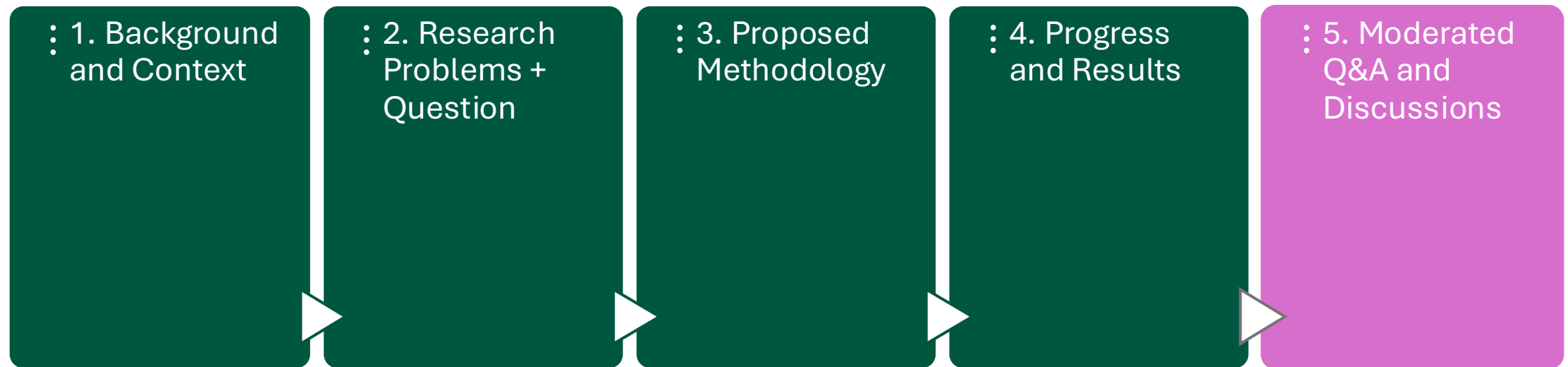
Towards a Stakeholder-Centered Auditing Framework for Assessing Fairness in (Music) Recommender Systems

Presented by: Valdy Wiratama

34th ACM International Conference on User
Modeling, Adaptation and Personalization (UMAP)
Monday, 8 June 2026 | Gothenburg, Sweden

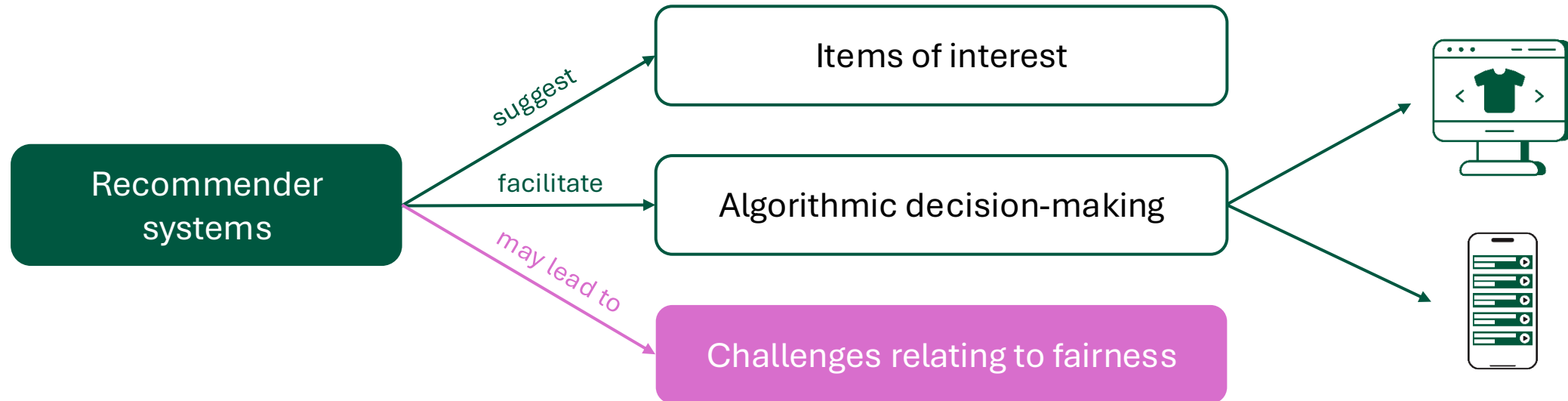


Structure of the Presentation



1. Background and Context

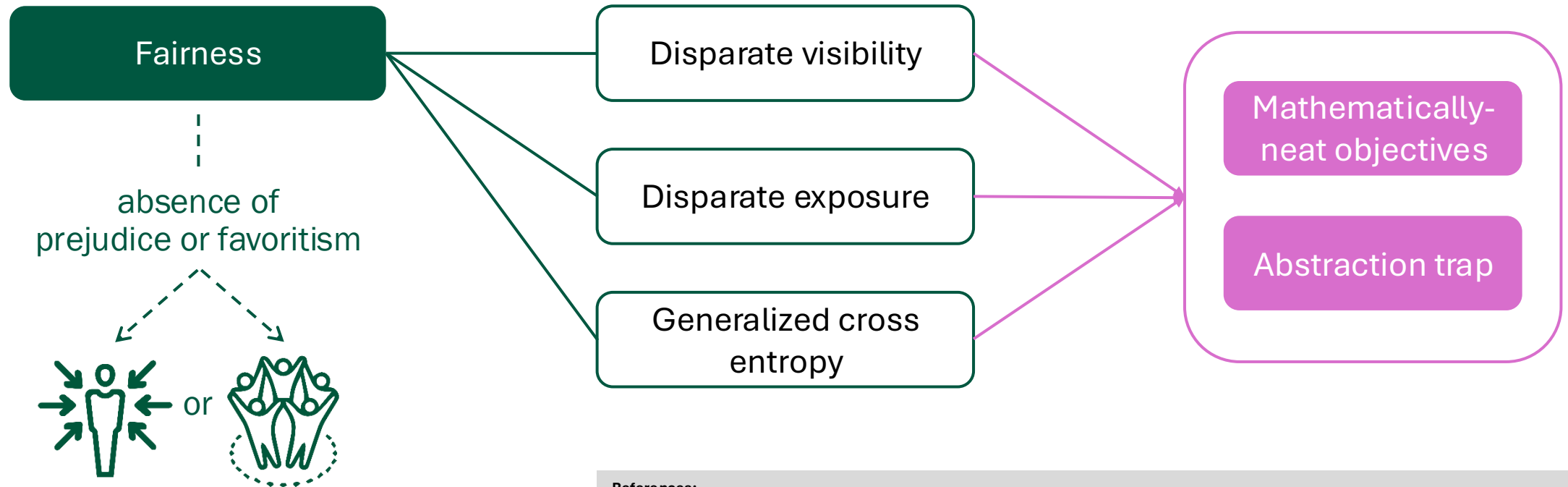
Background and Context



References:

- Burke, R. 2007. Hybrid Web Recommender Systems. In *The Adaptive Web*, Peter Brusilovsky, Alfred Kobsa and Wolfgang Nejdl (eds.). Springer Berlin Heidelberg, Berlin, Heidelberg, 377–408. https://doi.org/10.1007/978-3-540-72079-9_12
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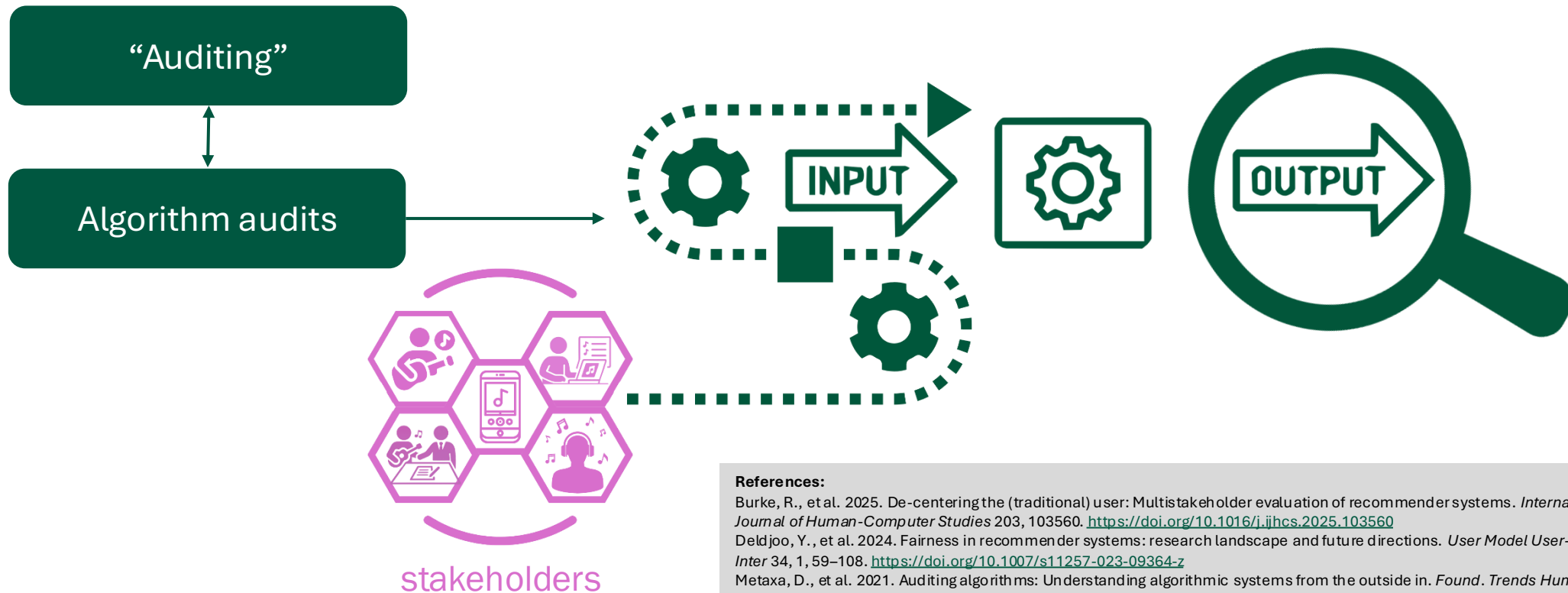
Background and Context



References:

- Deldjoo, Y., et al. 2024. Fairness in recommender systems: research landscape and future directions. *User Model User-Adap Inter* 34, 1, 59–108. <https://doi.org/10.1007/s11257-023-09364-z>
- Saxena, N. A., et al. 2020. How do fairness definitions fare? Testing public attitudes towards three algorithmic definitions of fairness in loan allocations. *Artificial Intelligence* 283, 103238. <https://doi.org/10.1016/j.artint.2020.103238>
- Selbst, A. D., et al. 2019. Fairness and abstraction in sociotechnical systems. In *Proceedings of the Conference on Fairness, Accountability, and Transparency*. ACM, Atlanta, GA, USA, 59–68. <https://doi.org/10.1145/3287560.3287598>

Background and Context

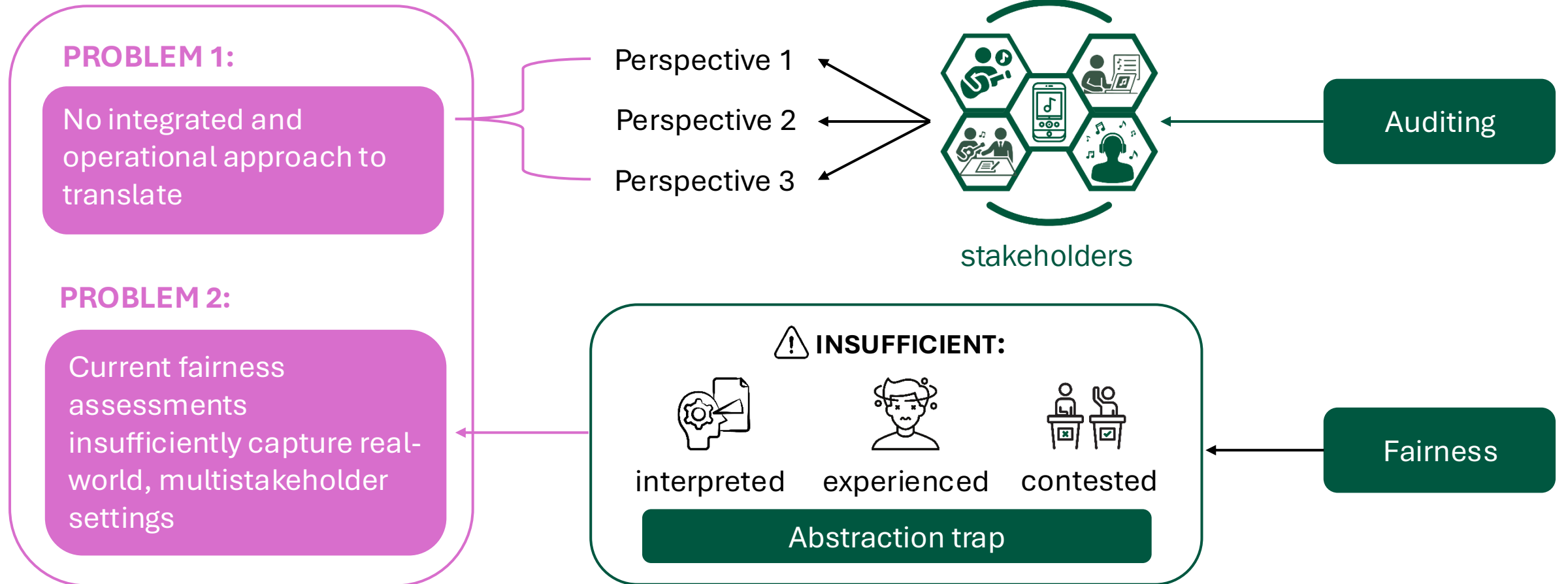


References:

- Burke, R., et al. 2025. De-centering the (traditional) user: Multistakeholder evaluation of recommender systems. *International Journal of Human-Computer Studies* 203, 103560. <https://doi.org/10.1016/j.ijhcs.2025.103560>
- Deldjoo, Y., et al. 2024. Fairness in recommender systems: research landscape and future directions. *User Model User-Adap Inter* 34, 1, 59–108. <https://doi.org/10.1007/s11257-023-09364-z>
- Metaxa, D., et al. 2021. Auditing algorithms: Understanding algorithmic systems from the outside in. *Found. Trends Hum. Comput. Interact.* 14, 4, 272–344. <https://doi.org/10.1561/11000000083>
- Sandvig, C., et al. 2014. Auditing algorithms: Research methods for detecting discrimination on internet platforms. *Data and discrimination: converting critical concerns into productive inquiry* 22, 4349–4357.

2. Research Problems and Question

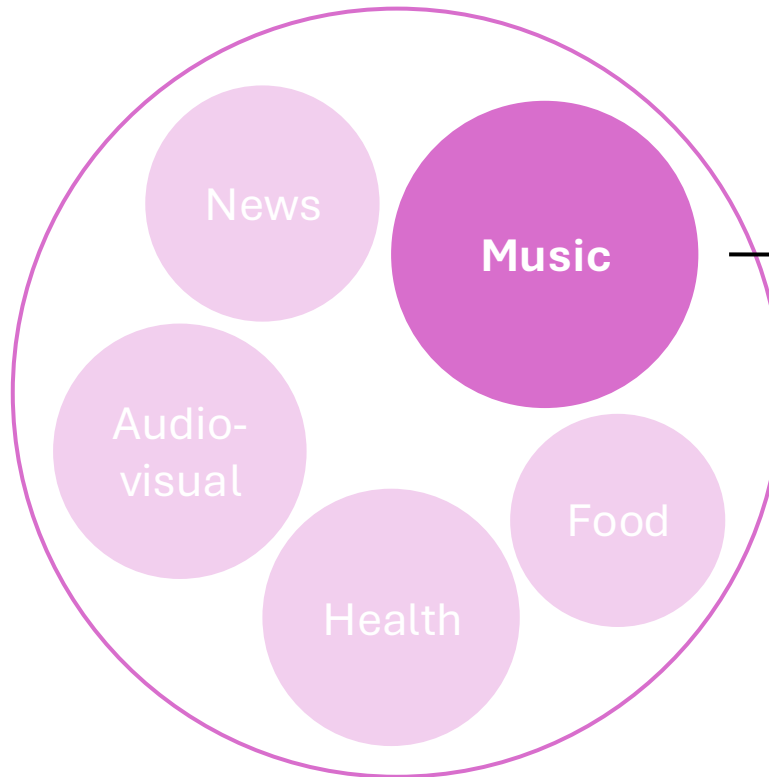
Research Problems and Question



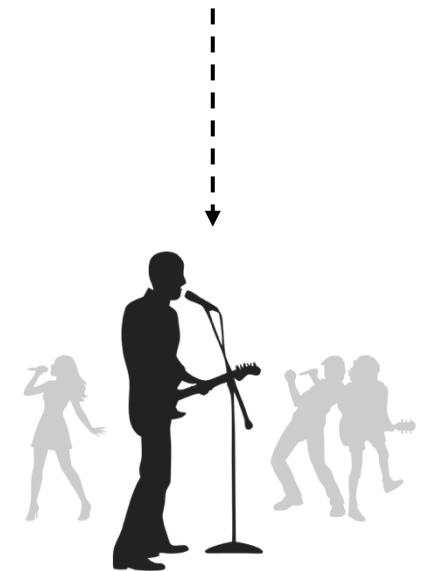
Research Problems and Question

RESEARCH QUESTION:

How can an auditing framework for recommender systems be established using a multifaceted articulation of stakeholder perspectives and interests on fairness?



Unfair starting point



References:

Ferraro, A., et al. 2019. Artist and style exposure bias in collaborative filtering based music recommendations. In *Proceedings of the 1st Workshop on Designing Human-Centric Music Information Research Systems*, 8–10. <https://doi.org/10.48550/ARXIV.1911.04827>
Ferraro, A., et al. 2021. Break the Loop: Gender Imbalance in music recommenders. In *Proceedings of the 2021 Conference on Human Information Interaction and Retrieval*, March 14, 2021. ACM, Canberra ACT Australia, 249–254. <https://doi.org/10.1145/3406522.3446033>

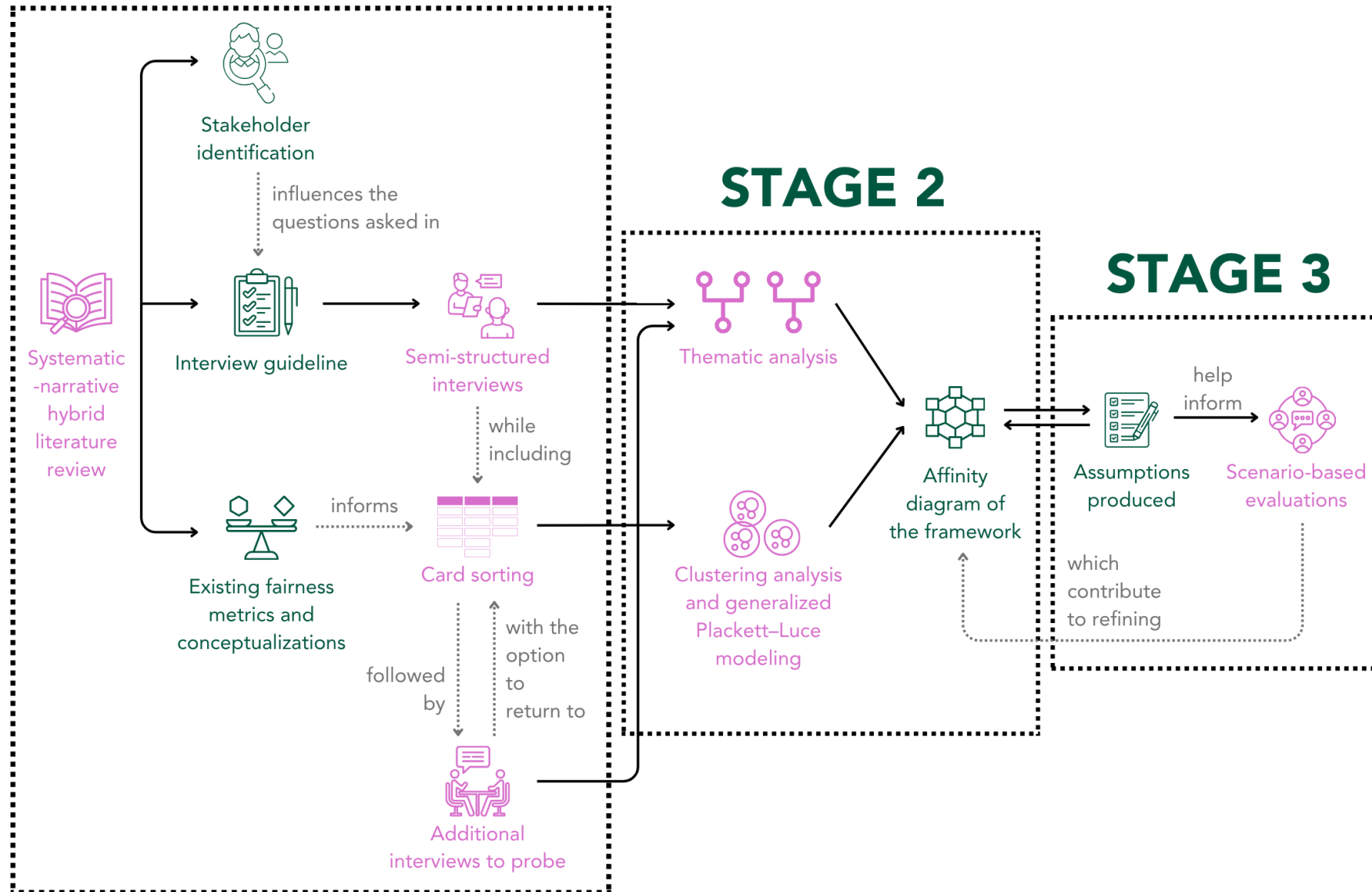


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3. Proposed Methodology

STAGE 1



4. Progress and Results

currently here

	Year 1				Year 2				Year 3				Year 4			
	2025	2026			2027			2028			2029					
	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3
Common																
Research definition and proposal	█															
State-of-the-art monitoring		█			█											
Conferences																
UMAP - Doctoral consortium			█													
Phase 1: Data collection																
Conducting literature review			█													
Identifying affected stakeholders			█		█											
Constructing interview guideline				█												
Contacting stakeholders for interviews				█		█										
Conducting interviews				█		█										
Phase 2: Framework development																
Transcribing the interviews							█									
Performing analysis of collected data							█		█							
Constructing the framework							█		█							
Phase 3: Framework evaluation																
Performing scenario-based evaluations										█						
Refining the constructed framework										█						
Phase 4: Thesis writing and defense																
Writing the thesis													█			
Defending the thesis													█			█



5. Moderated Q&A and Discussions

Next steps: intend to focus on stakeholders within the **item providers**' side

1a

Is it appropriate to focus on multiple stakeholders within the item provider group?

1b

Is it necessary to choose stakeholders across groups?

2

How different do the item provider-side stakeholders need to be?

Valdy Wiratama, MA

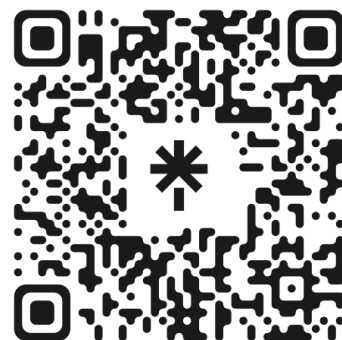
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 <https://scholar.google.com/citations?user=51d5-aoAAAAJ>

 EXDIGIT project: <https://exdigit.plus.ac.at/en/>

 InterIntSys research group: <https://interintsys.github.io/>



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