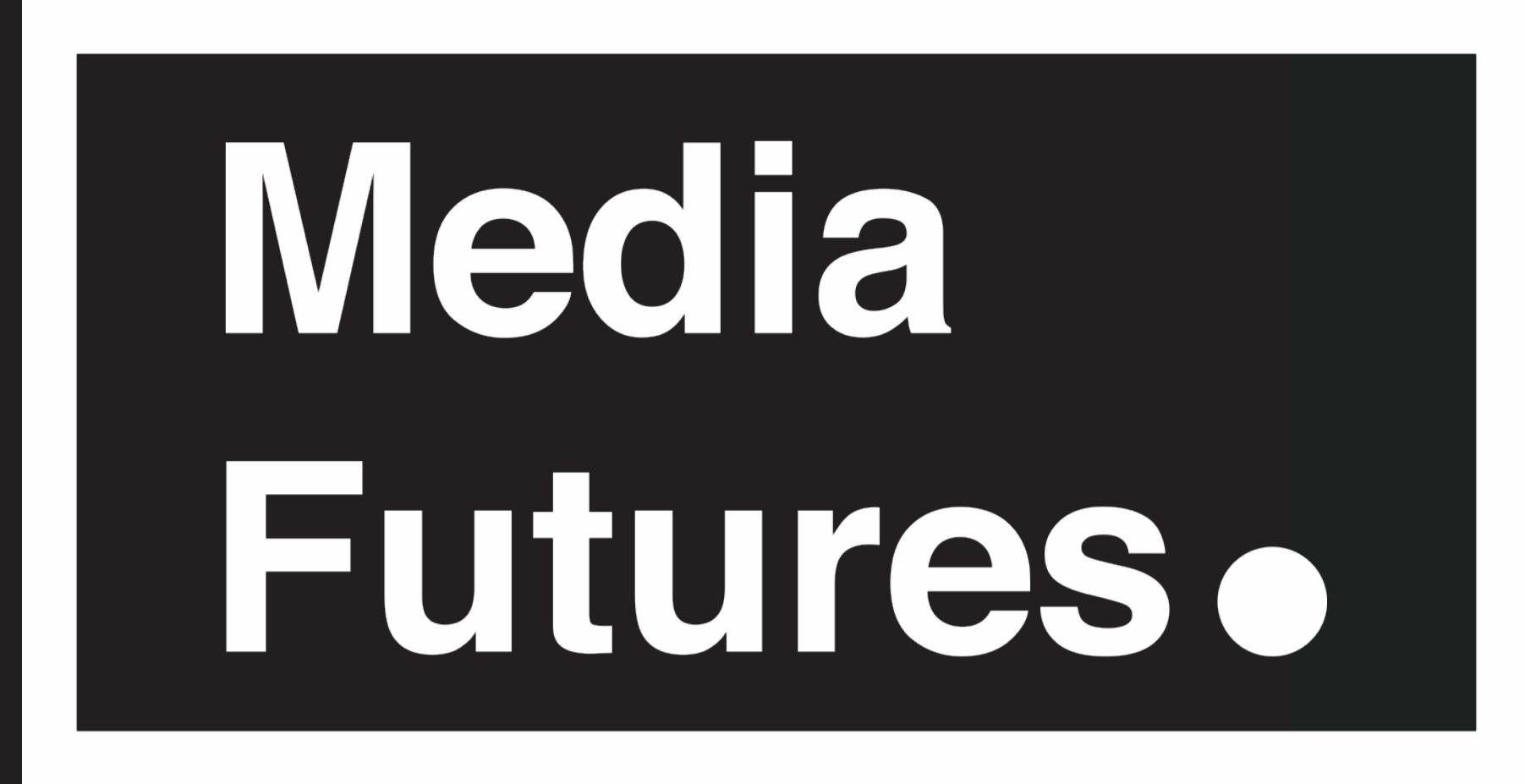


Personalized Playlists on TV 2 Play

A study on session aware recommendersystems, and age based demographics in collaboration with TV 2



Snorre Alvsvåg, snorre.alvsvag@uib.no

Supervisors: Christoph Trattner, Alain Starke
Industry Affiliated: Lars Skjerven, TV 2

Introduction and Motivation

TV 2 observes a trend where users tend to binge watch content of one sort, leading to a lesser exploration of the entire catalog. This is believed to lessen the time spent on the platform. There is a wish to implement a "Play-Next" functionality that creates a playlist of content personalized for that user, based on previous viewer sessions (user watched x then y then z).

Our focus is to enhance the users viewing experience by personalizing and diversifying what content the users watch. We're borrowing some techniques from the music domain[2], where session-aware recommendation systems have been widely researched, and applying them to movies - a domain where such research is surprisingly scarce[1].

Moreover, we're interested in how recommendations should differ in regards to adults versus children. With children are expected to favour repetition and adults favouring variety. Understanding these contrasting preferences is important for understanding our target audience.

The model

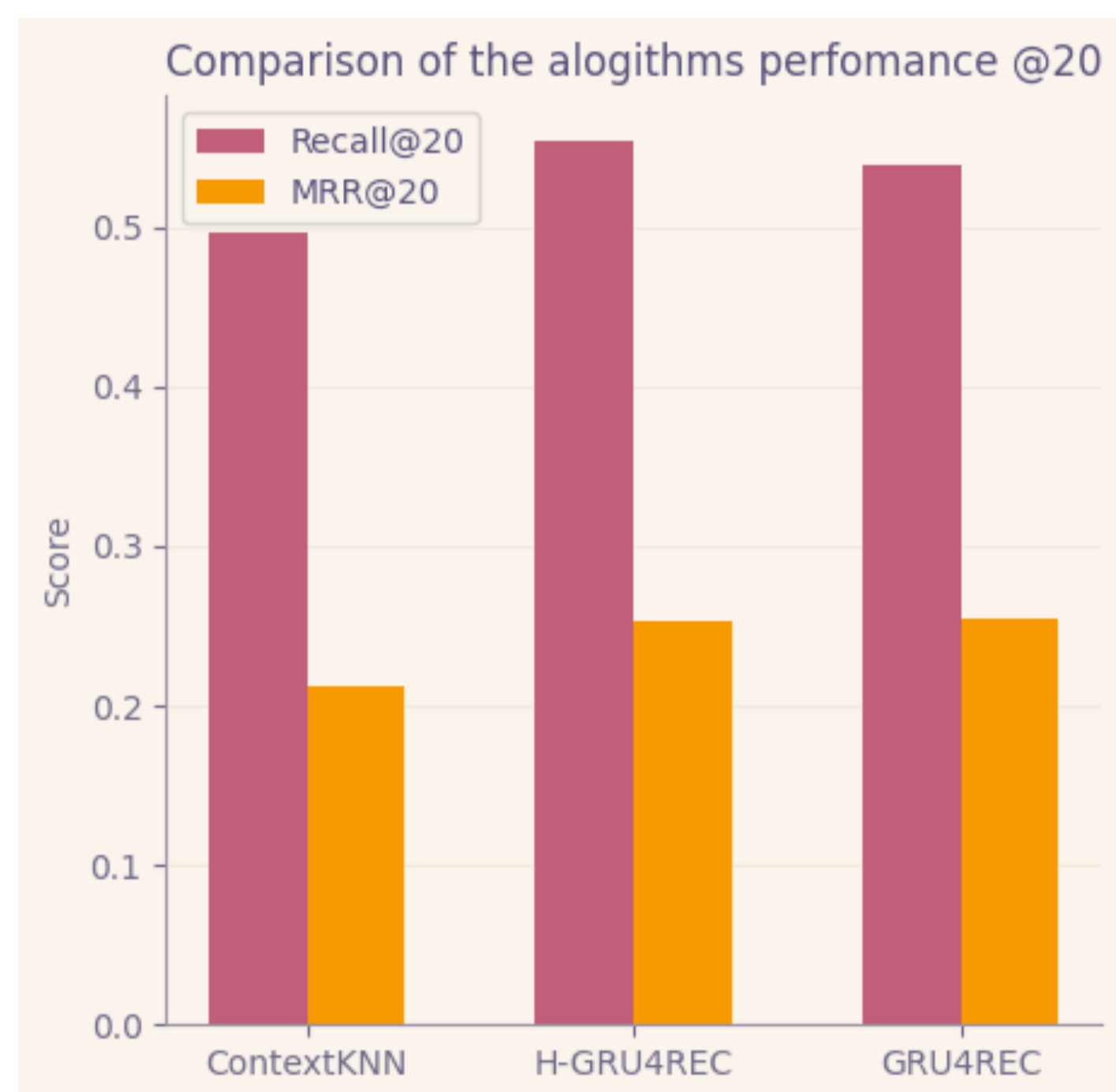


Figure 1: Comparison of the algorithms' performance @20 in the next-item recommendation task. From [1]

Even though recurring neural network (RNN) models such as GRU4REC and H-GRU4REC have shown a competitive edge in recent research (Figure 1), we choose to utilise a traditional KNN model, as its implementation and compute cost makes up for the performance loss compared to its neural counterparts.

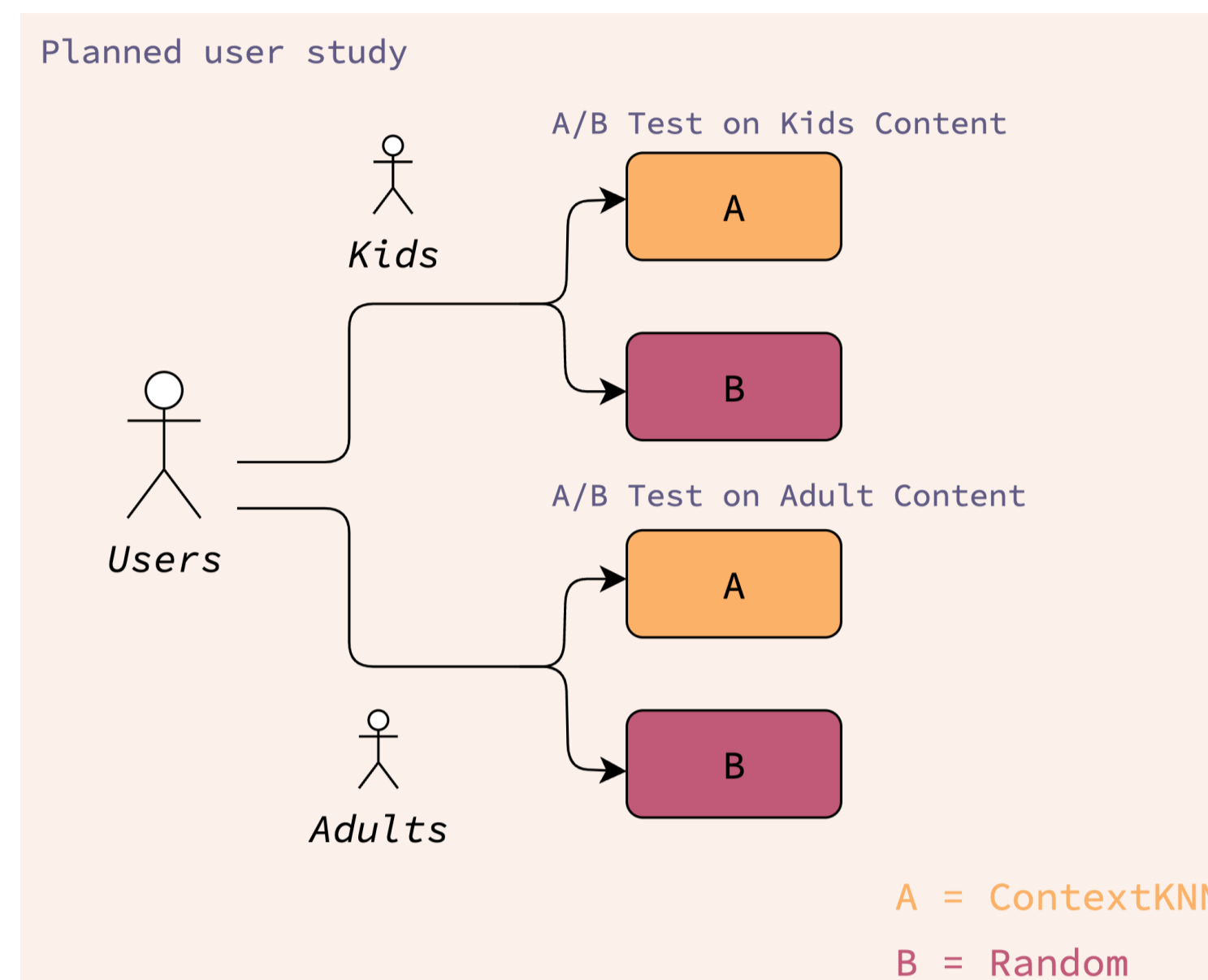


Figure 2: The idea for our user study

The study

We plan to conduct a field test where we run an A/B test where A is contextKNN and B is random. This will be done on TV 2 Play, where we can later extract metrics and information for analysis. By using TV 2 Play we can infer a few implicit feedbacks on our test, but we also plan to allow for explicit feedbacks:

Explicit Feedback Through UI

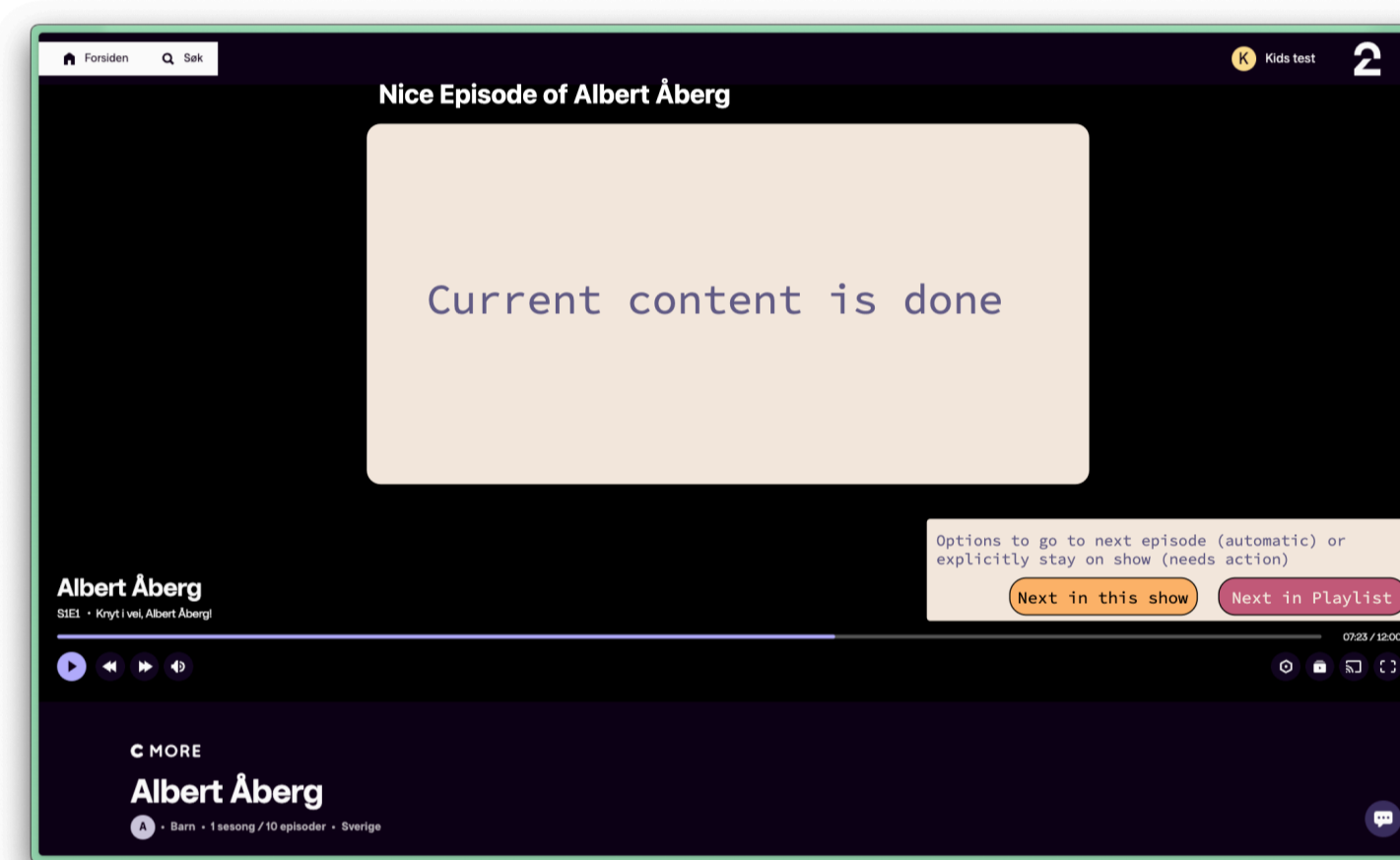


Figure 3: Explicit feedback strategy 1, user actively jumps off playlist to stay on the current content if applicable (e.g. ep 2 of the same series)

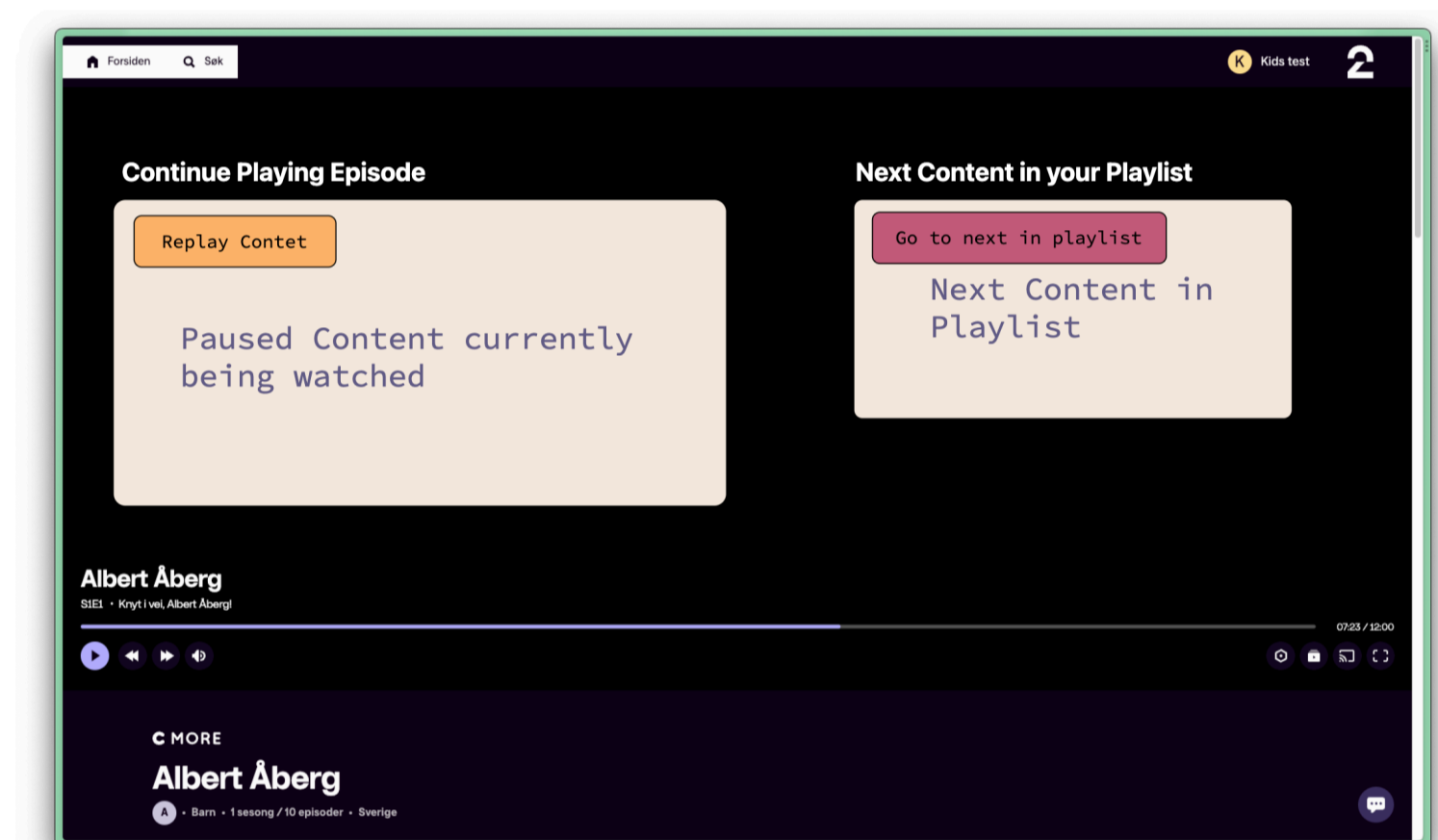


Figure 4: Explicit feedback strategy 2, user pauses current show and chooses to go to next episode in series

Implicit Feedback Metrics

Implicit Metrics	
1	User Quits Playlist, but keeps watching on the platform
2	User revisits the Playlist
3	Increased Time Spent on the platform
4	User saw more of the Catalogue
5	User's time to first action decreases
6	Others: popularity, other domain relevant metrics (diverse directors, diverse years...)

Figure 2: Implicit feedback strategies and other metrics based on content

- [1] C. Bernardis, M. F. Dacrema, F. B. P. Maurera, M. Quadrana, M. Scriminaci and P. Cremonesi, "From Data Analysis to Intent-Based Recommendation: An Industrial Case Study in the Video Domain," in IEEE Access, vol. 10, pp. 14779-14796, 2022, doi: 10.1109/ACCESS.2022.3148434.
- [2] Dietmar Jannach, Lukas Lerche, and Iman Kamehkhosh. 2015. Beyond "Hitting the Hits": Generating Coherent Music Playlist Continuations with the Right Tracks. In Proceedings of the 9th ACM Conference on Recommender Systems (RecSys '15). Association for Computing Machinery, New York, NY, USA, 187-194. <https://doi.org/10.1145/2792838.2800182>

PARTNERS

amedia Bergens Tidende HIGHSOFT

IBM NIK Schibsted 2

vizrt US NORCE

nb.no WOLFTECH Faktisk.

HOST



UNIVERSITY OF BERGEN

FUNDED BY

This research is funded by SFI MediaFutures partners and the Research Council of Norway (grant number 309339).

Forskningsrådet

Norwegian Centre for Research-based Innovation