

**Thesis Portfolio**

**Xbox Streaming Hub App**  
(Technical Paper)

**Ads Affect Actions**  
(STS Paper)

An Undergraduate Thesis

Presented to the Faculty of the School of Engineering and Applied Science  
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## **Sociotechnical Synthesis**

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It seems like every month that I have been working on this project, another streaming service has come out. As content is scattered among an increasing number of hosts, it becomes increasingly annoying and time consuming to switch between their respective apps. There have been a few solutions to this, such as Google TV, Apple TV, or Amazon Firestick; however, each of these solutions are only for specific platforms. To solve this problem for Xbox, my group developed a streaming hub app. This way there is only one place needed to search for a new TV show, slow app load times can be avoided by only having to launch the hub app and whichever app is needed to play the content. To help to give good recommendations to the user, we used a machine learning to group movies and shows to those that the user has already watched. In doing this, users' data was needed to be collected, and it was obvious that this could be used for targeting advertisement.

Because my technical project highlighted this data collection, I focused my research paper on how ads can change its viewers. There is a widespread belief that because a person doesn't immediately go to purchase a product when they see an ad, they are not swayed by the ad. In reality the way ads often aim to work is through subtle changes in long-term brand perception. It is through this slow manipulation in feelings towards something that ads can plant the roots for sales. Some troubling uses of ads are in political campaigns and in children. Political ads are a part of elections, but it should be declared who is paying for them and what candidate they endorse. This was an issue in the 2016 election, but the legislature to help regulate

online political ads is still lacking. Perhaps the most troubling part of ads is that food ads can lead to increased obesity in children. These habits that cause children to seek out more sugary foods can have a lifelong impact on their wellbeing.

My technical project developed an app on Xbox where the content from all streaming services could be browsed, which helps many viewers access ad-free content more easily. This prevents having to do tedious typing and searching between multiple apps. The design of the app is similar to many other streaming apps, where the main body of the screen is taken up by horizontal bars of programs organized in different categories. This is augmented by a search bar at the top and several small icons, such as settings or switching profiles. We used a machine learning algorithm to help predict which shows a viewer would be more likely to view and would recommend them more often. This app is special because it functions on an Xbox and will hopefully be able to expand to any platform, rather than just being on a first party platform.

Doing the technical project highlighted the potential for companies to profit off of the information that was originally gathered to help improve the consumer's experience. Ads are an acceptable part of how our economy works, but it is important that the agendas for the advertisements are not hidden, especially in politics. The morals of running certain ads should also be questioned and more regulated. In the past, cigarette television ads have been banned because of the widespread detriment to society that was caused from smoking. In a similar vein to this, ads to children on specific products should be thoroughly examined. Children are much more easily influenced than adults and sometimes don't realize what ads aim to do. It is important to educate children on how they are being manipulated, or even a widespread change on how children's ads are presented.