Understanding the Use of Algorithmic Recommendations and How to Address Concerning Content

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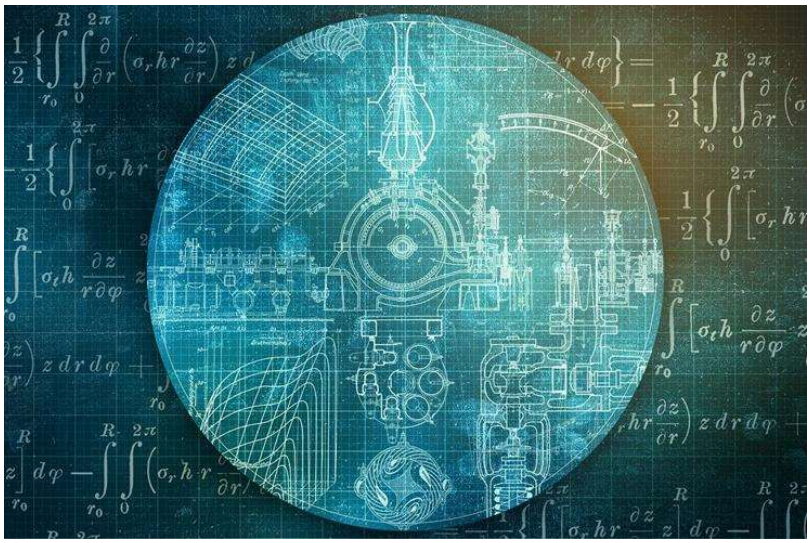

AM I THAT PREDICTABLE?

UNDERSTANDING THE USE OF ALGORITHMIC RECOMMENDATIONS AND HOW TO ADDRESS CONCERNING CONTENT

by Brian J. Kelly - Supervisory Cyber Analyst

On December 22, 2023, IPPC Technologies and the Spotlight team suffered a tremendous loss with the passing of Spotlight Analyst Loretta Bridges. Loretta joined IPPC's Spotlight team in March 2023. Prior to retiring in 2019, Loretta was a DQA, Training & Automation Support Specialist in the Eastern District of Missouri (30 years with Pretrial Services and 2 years with the Probation Office). Along with her extensive IT experience,

she was also responsible for the analysis of data captured by computer & Internet monitoring technologies in the ED/Missouri. As a Spotlight Analyst for IPPC Technologies, Loretta was one of the first members of the Spotlight team and served as a mentor to new analysts. She was a dedicated and hard working employee, as well as a kind and caring person, she will be greatly missed. Donations in Loretta's memory have been made by IPPC Technologies to The BackStoppers, Inc. and the National Center for Missing and Exploited Children (NCMEC).

The use of algorithms to process data and predict behavior has expanded exponentially over recent years due to the massive amount of information collected and compiled by numerous platforms. These algorithms are used to recommend products and services by displaying advertisements seemingly directed at only you. The algorithms also make recommendations to increase engagement, while feeding the algorithms further, as you participate in the infinite scroll of whatever social media platform has sucked you in for the day. In social media, algorithms typically play two roles: processing and propagation. On the processing side, some examples of algorithms used to process data include facial recognition, image filters and tagging, audio transcription, etc. In regards to propagation, which can be determining what information is/or should be spread, platforms will collect data from and use searches, feeds, content moderation, friend recommendations, notifications, etc. There are several algorithm models used by social platforms, such as:

- Collaborative Filtering: Recommending content based on the preferences of users with similar tastes.
- Content-Based Filtering: Recommending content similar to what a user has interacted with in the past, considering content features and attributes.
- Hybrid Models: Combining collaborative and content-based filtering for more robust recommendations.

When looking at social media usage, consider your own behaviors on any platform you use, such as:

- What profiles are you following?
- What posts have you liked and/or commented on?
- What videos have you watched?

Algorithm models may also collect and use metadata to make recommendations, such as:

- IP Address
- Geolocation
- Device Information

With a person under supervision (PUS), these algorithms can increase exposure and access to problematic content, while providing a position of plausible deniability. Consider this scenario as an example: While monitoring a sex offender who committed the offense of possession of child pornography, and has a known preference for pre-pubescent females, you observe screenshots of adolescent female gymnastic videos appearing on the PUS's Instagram feed. At first glance, you may believe the PUS is following or has subscribed to the profile pages, causing the videos to show up

on the feed. But upon closer inspection, you realize the PUS appears to have no connection to the profiles, and is not engaging in the posts. This is the algorithm at work, displaying content it believes the user wants to see with the goal of increasing engagement. A recent report by the Wall Street Journal covered a concerning nature of their algorithm: “Instagram's Reels algorithm delivers overtly sexual content to accounts which only follow children — as well as ads for big brands alongside them.” https://mashable.com/article/instagram-reels-meta-algorithm-children-sexual-ads

As discussed earlier, this behavior by the algorithm can be based on a number of data sets, including past searches and activity. Once concerning recommendations are detected, there are ways within each social media platform to “clean up the algorithm” of a person under supervision to prevent further issues of question and concern. This often involves a user going into their social media profile settings and adjusting one or more of the following:

- Unfollow/Unsubscribe to profiles with questionable/concerning content
- Unlike posts containing questionable/concerning content
- Clear activity history (Search, Watch, Cache)
- Set sensitive content (or similar setting) to highest level(s) reduction
- Turn Off/Snooze suggested content
- Turn Off AutoPlay

Along with adjusting the above settings, the following are links and suggestions to clean up a

profile on specific platforms. Platforms are often updating and changing profile settings so it is important to stay current with popular social media platforms being used by persons under supervision:

INSTAGRAM

https://boostmeup.com/blog/reset-instagram-content-suggestions/
https://robots.net/tech/how-to-clear-suggestions-on-instagram/
-clear search history
-clear/manage explore page preferences
-adjust Suggested Post and Sensitive Content Control settings

FACEBOOK

https://www.facebook.com/help/485502912850153/
https://www.guidingtech.com/turn-off-suggested-for-you-posts-on-facebook/
-manage Suggested for You

YOUTUBE

https://support.google.com/youtube/answer/6342839
-clear Watch history
-clear search history
-turn off history
-YouTube Music: turn on Restricted Mode

TIKTOK

https://www.howtogeek.com/789530/how-to-reset-the-tiktok-algorithm/
-clear profile cache

TWITTER/X

https://help.twitter.com/en/safety-and-

security/control-your-x-experience
https://www.blockpartyapp.com/blog/how-to-clean-up-your-twitter-timeline/
-Unfollow concerning/problematic accounts
-Content You See: Uncheck “Display media that may contain sensitive content”
-Search settings: Check “Hide sensitive content”

QUORA
https://www.quora.com/How-can-I-change-the-topics-that-are-recommended-to-me-in-Quora
-Quora requires login (can use existing accounts: Google, Facebook), which creates the users profile
-Quora requires users to pick 5 topics for personalization of the feed. The user is then "following" the topic. If any of these topics are concerning or problematic, they can be unfollowed and/or muted.
-In Profile - Settings - Privacy, the PUS can turn off "Allow adult content in recommendations"
-In the user Profile, you can see any content the user has Bookmarked. Concerning content should be removed.

IPPC Technologies continues to strive towards predictive and proactive solutions so officers can intervene early, address areas of concern and change behavior. Spotlight’s mission is to provide agencies and officers with streamlined and verified leads, for possible intervention opportunities related to concerning behaviors. Spotlight Analysts will use the following canned language when validating a concerning/relevant event that is being recommended by a social media platform: “Content is being recommended by social media platform:” and cite the platform. For more information on Spotlight, please call

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