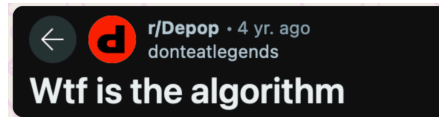


# Explainer: Algorithms in Reselling



After five years of ethnographic research on reselling in the U.S. (from digital ethnography in reseller spaces to countless conversations with resellers), I've heard just about every theory on platform algorithms, from eBay's old Cassini to Instagram's recommenders. While some of these ideas hold grains of truth, much of what resellers call "the algorithm" is often anecdotal and unclear. And that's not their fault! Platforms, even when they provide explainers, deliberately keep parts of their backend opaque for competitive reasons. On top of that, these systems are complex and don't behave the same way for everyone. We created these explainer resources to help resellers cut through the confusion and engage more critically with the conversation around algorithms.

We organized our explainer in four sections:

1. **Section 1** describes the general state of how reseller communities discuss algorithms
2. **Section 2** goes over a high level understanding of the main types of algorithmic systems relevant for reseller platforms
3. **Section 3** dives deep into Instagram algorithmic systems and some of their components
4. **Section 4** is a link bank list of resources we used for the explainer, in case you want to dig deeper on your own.

## Before we begin: A note on the word "algorithms"

The term algorithm originates from computation, a field to make mathematical calculations that precedes digital computers. The term algorithm traces its origins to the Latinized name of Muhammad ibn Mūsā al-Khwarizmī, a 9th-century Persian scholar known for his contributions to mathematics, astronomy, and geography. His name, Algoritmi, was associated with the decimal number system in Latin for centuries. Over time, the word algorithm was adopted into English through French, eventually evolving into algorithm as we know it today. Meanwhile, the term algorism, which first appeared in Middle English, originally referred to the system of Arabic numerals.

Nowadays, algorithms tend to be defined as rule systems followed by computers for specific purposes. In computing, they are ubiquitous. A method to achieve a goal such as content filtering or recommendation has multiple algorithms, on top of infrastructure of data, physical computing places like data centers and workers turning on and off the computers.

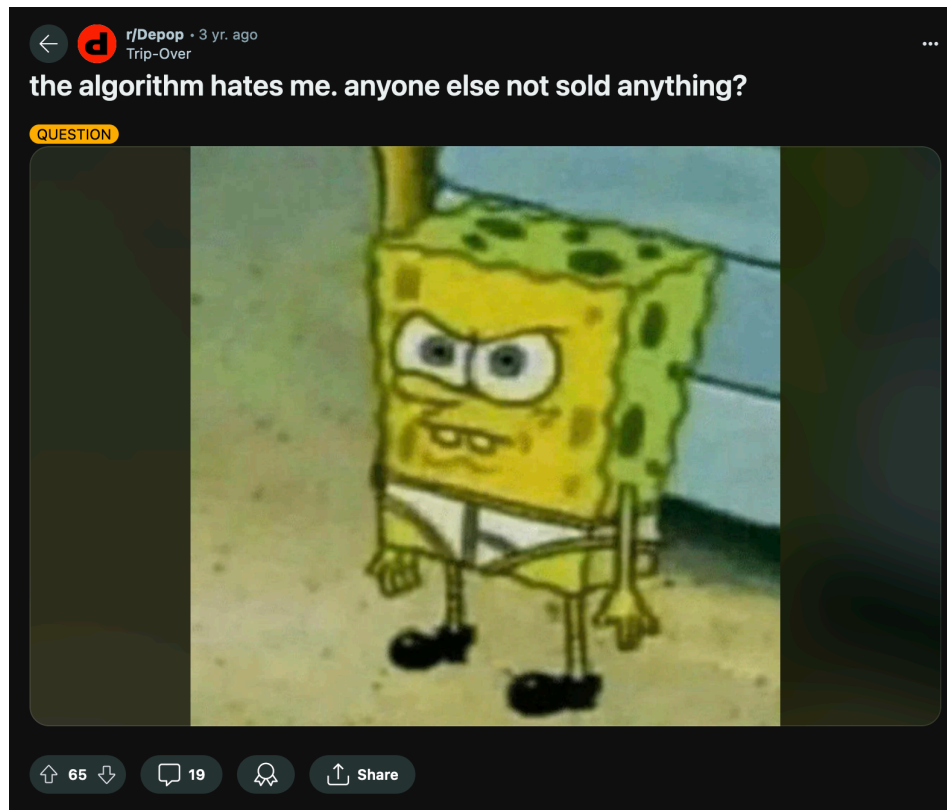
Is the combination of algorithms or even methods to achieve of goal, an algorithm itself? It could be! (how confusing!) so in some ways, resellers are not necessarily philosophically wrong when they talk about the "Poshmark algorithm". It is not, however, how people making these systems usually refer to them. Regardless, understanding different parts and algorithms that are used by platforms for different purposes like recommendation, or suggested pricing, may empower resellers not only to understand the systems better, but to compare, advocate for specific changes, or just sharpen their own experiments with a platform and their systems.

## Section 1: Reseller's talk about Algorithms

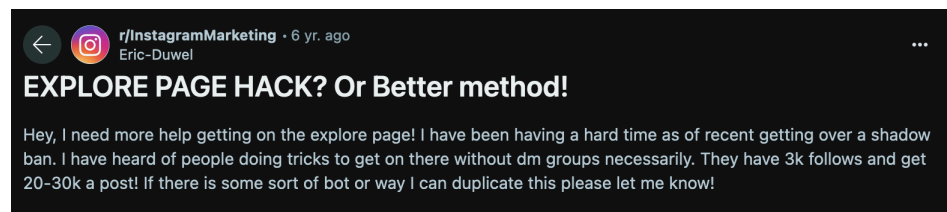


Resellers have been making collective attempts to interpret the inner workings of “the Algorithm”, sharing advice and noting patterns on how they best use the algorithm to strengthening their presence in the online marketplace. With the lack of transparency, frequent changes, and unpredictable nature of these platforms, the general understanding of what exactly “The Algorithm” is, can be pretty vague. This murkiness is known as an academic concept called **Algorithmic Opacity**, where transparency on how exactly these algorithmic processes work is either purposely obscured or just too complex or technical to communicate.

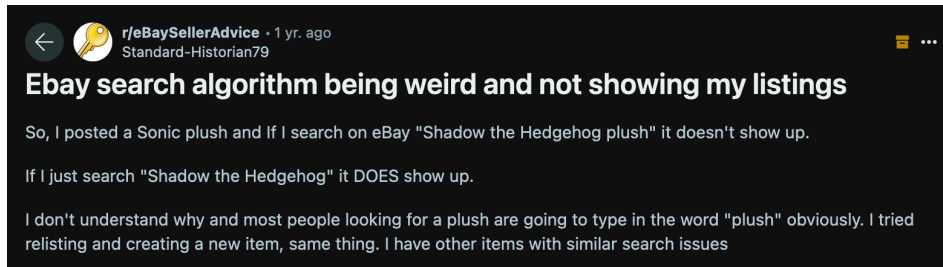
When your entire business relies on your ability to be successful within this mysterious “Algorithm”, this algorithmic opacity often leads to speculation, confusion, and frustration around what exactly you have to do to “win”.



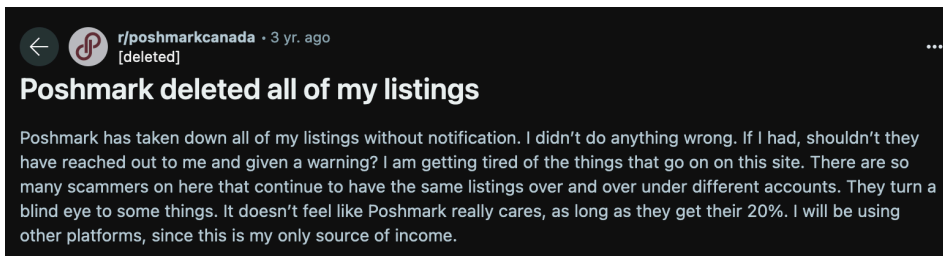
What often gets misconstrued is that there's one single algorithm that governs how your content is treated on any particular platform, however there are a number of algorithmic processes that work in tandem with each other and show up in slightly different ways, depending on the reselling platform you choose to use. For instance, one very common algorithm that's present across reselling and social media platforms, is the recommendation algorithm that (ideally) gets your content in front of the buyers who are most likely to engage with it.



The algorithmic process for recommending content works pretty similar to search algorithms as well, known as Search Engine Optimization (SEO). Typically, in addition to ranking search results by how likely the listings are to be engaged with, SEO also ranks results by the specific use of key words and hashtags.



There is also a range of algorithmic approaches that are used to moderate content and screen for inappropriate text or images that might violate community guidelines like weapons, counterfeit items, or copyrighted materials of large corporations products. The methods that these platforms use to identify whether an item is prohibited has a long history of yielding high numbers of false positives that lead to resellers having to jump through hoops to get their accounts or listings restored and indicating a prioritization of large companies over resellers.



As we begin to dig into the role that these algorithms play in the reseller marketplace and the labor that support it, we can learn a lot through thinking through our own relationship with the algorithm. What do these platforms prioritize and how is that reflected in the algorithm? How does that relationship with the algorithm impact how you think about your own labor? What does it mean for the algorithm to prioritize the needs and wants of billion dollar corporations over the livelihoods of small business owners?

## Resources

### The problem of algorithmic opacity, or "What the heck is the algorithm doing?"

Opacity in AI used to be an academic problem - now it's everyone's problem. In this piece, I define the issues at stake, and how they tie into the ongoing discussion on AI ethics.

<https://diginomica.com/problem-algorithmic-opacity-or-what-heck-algorithm-doing>



### AI's mysterious 'black box' problem, explained

Learning by example is one of the most powerful and mysterious forces driving intelligence, whether you're talking about humans or machines. Think, for instance, of how children first learn to recognize letters of the alphabet or different animals. You simply have to show them enough examples of the letter

<https://umdearborn.edu/news/ais-mysterious-black-box-problem-explained>



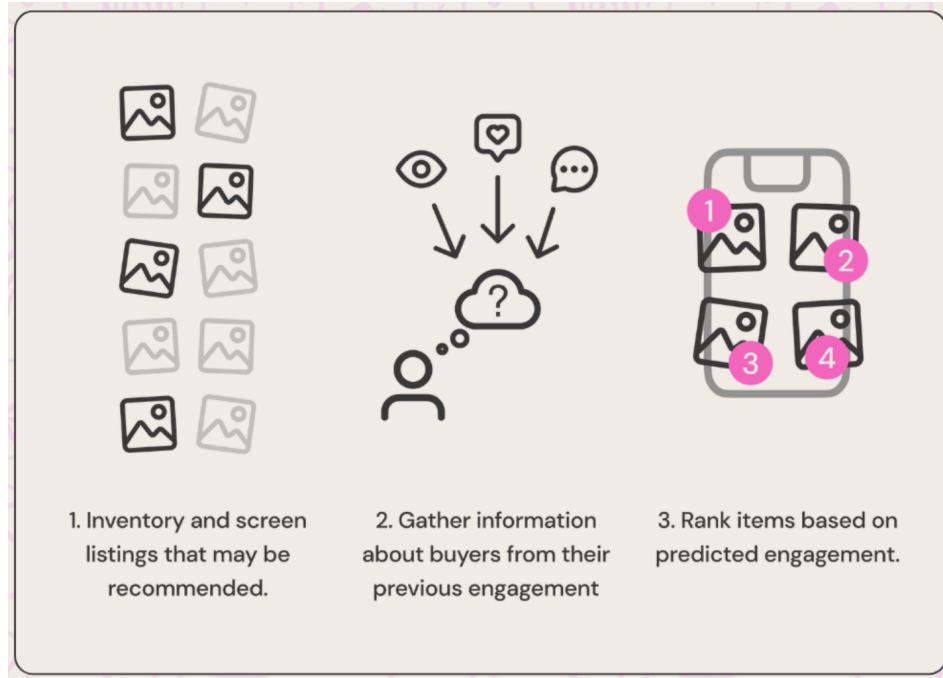
## Section 2: Most common types of algorithms in reselling



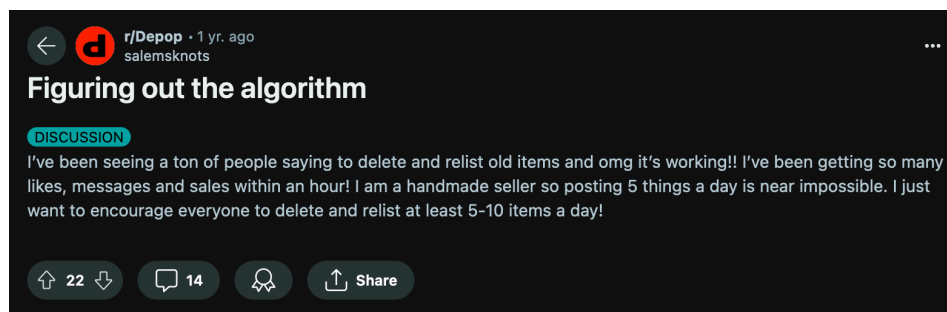
### Search and Recommendation Algorithms

One of the most important and relevant algorithms within reselling is the personalized recommendation algorithm that takes your content or listing and shows it to audiences who would be most likely to engage with it. Generally, this algorithm has three steps:

1. **Identify listings that may be recommended to buyers.** Oftentimes there is first a moderation or screening process done to ensure that nothing offensive or inappropriate is recommended.
2. **Gather information about buyers.** This includes previous engagement, what type of listings they have bought or demonstrated interest in prior, if there is a history of engagement with a particular seller, etc.
3. **Rank the items based on predicted engagement.** This may mean, clicks on a listing, amount of time viewing it, likes, comments, shares, purchase rate, etc.

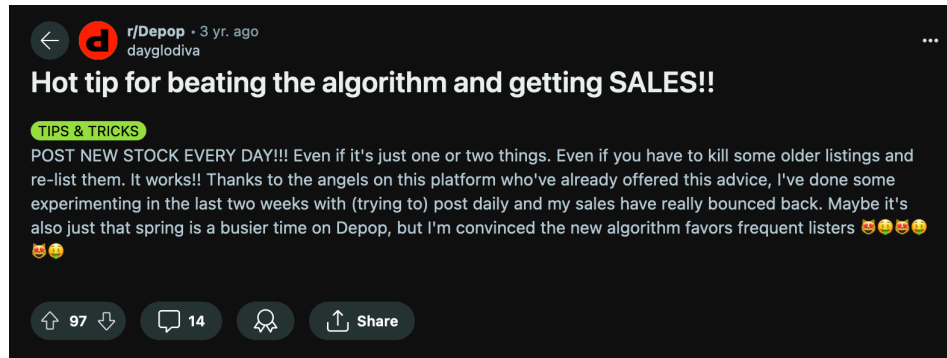


Different platforms implement the recommendation algorithm to various levels of complexity. For instance, Instagram uses an AI supported algorithm for the entirety of their platform from the feed, stories, explore page, to the search engine results, all displaying algorithmically recommended content. Meanwhile on Depop, there are designated sections on the homepage where recommended listings are indicated as 'Suggested for you' or 'Based on your likes and saves' with the rest organized by categories such as style, price, or brands.



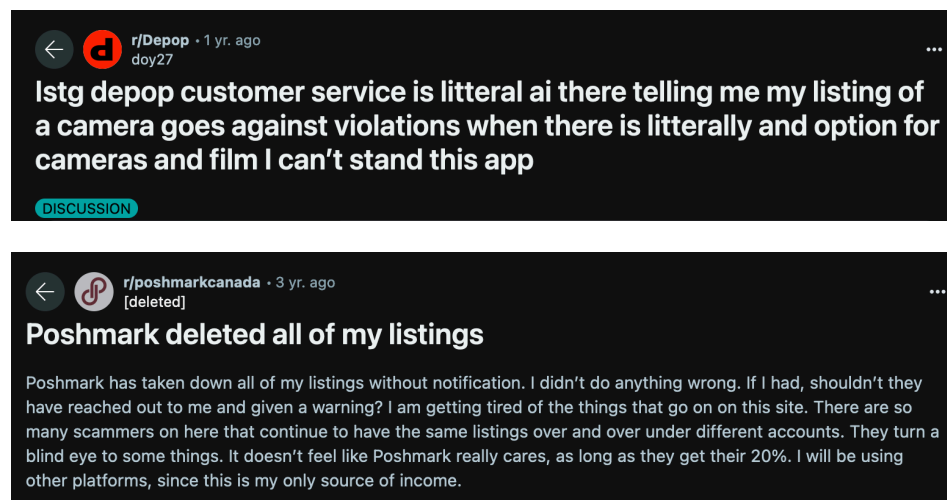
This message shows that sellers experiment with tactics motivated by communal sensemaking of the algorithmic systems of Depop. Seller's tactics are influenced by the kinds of thing they sell (such as quantities, uniqueness, ect) which could determine how effective this tactic is for them.





The notion of "beating" the algorithm demonstrates that sellers also perceive their interaction with the system as a gamified dynamic.

Platforms also often employ a range of algorithmic approaches to moderate content and screen for inappropriate text or images that might violate community guidelines. This is often done using neural network or AI models that are trained on a big batch of content (images, text, audio, and video) that users and human moderators have previously flagged as inappropriate. The model then analyzes posted content via image recognition and text processing to indicate content that matches up with some of these red flags.



Platforms often outline tips on how to best craft a listing that is more likely to get picked up by the recommendation algorithm and less likely to read as spam or inappropriate. They often suggest elements like high quality photos, clear and accurate descriptions, the utilization of hashtags, and avoid. However, when there are real people involved in this process of creating and consuming content, these algorithmic systems get more complex. Many resellers resort to using crafty workarounds and guidelines to try to remain competitive in the marketplace like relisting content to appear as a fresh listings or being very intentional about writing a comprehensive description while keeping the word count low. Even then when you add the layer of someones marginalization, that also adds to the reception of someones listing under the algorithm. For example, imagine someone posts a listing of a T-shirt where they modeled the garment in the listing photo. How might a listing with a marginalized body in the listing photo get treated differently by the algorithm based on existing systems of oppression and discrimination?

There are countless examples of AI models causing adverse and discriminatory effects after being trained on content that isn't representative of our society. When these algorithms have the power to decide who is allowed to show up and be visible on these platforms, it can lead to marginalized creators being wrongfully penalized for their appearance, way of

speaking, or even the topics that they choose to publically talk about. A study recently indicated that around 22% of content that was removed for violating Instagrams policies, were false positives.

## Section 3: Instagram Algorithmic Features

Instagram is a large platform for reselling, especially for vintage sellers, but also for resellers who want to create alternative streams of income via their socials. In the past, Instagram has attempted to provide some transparency about their systems under pressure by social media workers, disseminating videos and online resources partly revealing how they work. We summarize some of their explainers. Beware: these systems are often changing, and understanding them may be time-consuming and possibly unreliable.

### 1. Explore Page

The Instagram recommendation and explore page algorithms are ever changing and hard to pinpoint exactly what makes things successfully be presented to more eyes. Generally it is understood that there are four factors for your content landing on the explore page.

1. **Engagement:** Is your post already getting lots of likes, comments, shares, and saves *shortly after posting*. These metrics mean that the piece of content was high quality and engaging enough to share to a wider audience of people
2. **Relevancy:** Making sure that the content being presented is similar to other content that is being engaged with by your target audience. If your audience tends to like multi-page infographics, more content like that would be more likely to show up on their explore page.
3. **Recent Activity:** Having a consistent and regular push of content is a good way of the algorithm “remembering” that you have high quality content and can continue to push it. If you take a break, it might have to reassess your content again.
4. **Consistency:** Keeping a consistent posting schedule with high-quality content, spacing out the posting and engagement, allows you to not be read as spam and be better identified as a legitimate account

### 2. Content Moderation

<https://themarkup.org/automated-censorship/2024/03/01/how-automated-content-moderation-works-even-when-it-doesnt-work>

<https://themarkup.org/automated-censorship/2024/02/25/demoted-deleted-and-denied-theres-more-than-just-shadowbanning-on-instagram>

### 3. Content Ranking

Each part of the app – Feed, Stories, Explore, Reels, Search and more – uses its own algorithm tailored to how people use it.

<https://about.instagram.com/blog/announcements/instagram-ranking-explained>

To understand how content ranking works on Instagram, its important to understand how people use different parts of the application to look for different things. Because the needs are different across the app, the content ranking operates differently as well.

#### Ranking the Feed

The goal of ones IG feed is to have a catchall of content that you would come across from all over the application. With it being more general, it is important to have a larger variety and range of content represented on the feed. The ranking algorithm steps can be described as:



1. **Identify what to rank:** The goal here is to have a mix represented between recent posts from people you follow and recommended posts from people you don't follow
2. **Break down the signals:** Gathering the specific information about you, the post, and the person who posted the content, to be able to analyze all the potential factors. The most important signals in order of importance are
  - a. **Your activity:** past engagement with other posts
  - b. **Post Info:** How popular and engaging the post is, how fast people are engaging with it, when it was posted, what location was attached to it if any
  - c. **The Person who Posted:** How many times that persons account has been interacted with and are those people similar to you?
  - d. **Your history of interaction:** do you comment/like/share/save when you have come across this persons content in the past?
3. **Predict Engagement:** Making some assumptions on, based on the prior signals, how likely you are to interact with a post in different ways. The more likely you are predicted to interact, the higher up in the Feed you'll see the post. There are 5 interactions they predict:
  - a. How long you are looking at the post
  - b. comment
  - c. like it
  - d. share it
  - e. tap on the profile photo

There are also some elements to ranking that ensure that posts are spread out in a flow that is not too spammy. For instance, making sure that posts from the same person dont show up in a row or too many suggested posts back to back.

## Ranking IG Stories

The goal of IG stories is to view and share everyday moment with people and interests that you care about. It starts by identifying all the various types of stories that you could view that ranks them based on three input signals

1. **Viewing History:** how often you view this persons stories
2. **Engagement History:** how often you interact with this accounts stories (likes, dms)
3. **Closeness:** are you friends, family, close friends?

Then the predictions are made on what stories you would find most relevant and valuable

## Raking Explore Page

Purpose is to help people explore new things. The way content ranking works here is very similar to that of the feed and stories. Here, there are stricter guidelines around what is allowed to be recommended to ensure that people don't stumble across content that they would deem offensive. <https://help.instagram.com/313829416281232>

## Ranking Reels

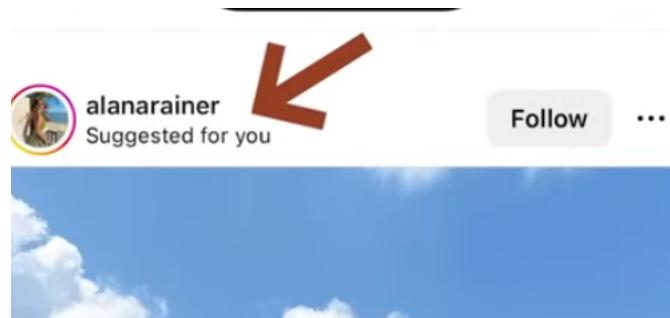
Reels are ranked fairly similar to other types of content on the platform where engagement metrics (likes, comments, shares, view time) were the main metric to getting recommended. However, this meant that accounts with a large following would receive much more reach. It has recently been adjusted to help smaller creators get their content out to new viewers by removing content aggregators from recommendations. This means prioritizing original content over content that is not original (i.e. accounts that take preexisting content and repost it without enhancement.)

## 4. SEO

### Specifics of the recommendation algorithm

[https://www.google.com/url?sa=t&source=web&rct=j&opi=89978449&url=https://www.instagram.com/mosseri/reel/Cs6gh\\_NgPF0/?hl=en&ved=2ahUKEwiPu7m8m-OGAxX-l4kEHacaD\\_wQwqsBegQIKRAF&usg=AOvVaw1GiHMckfbfxb1c66EtSk9](https://www.google.com/url?sa=t&source=web&rct=j&opi=89978449&url=https://www.instagram.com/mosseri/reel/Cs6gh_NgPF0/?hl=en&ved=2ahUKEwiPu7m8m-OGAxX-l4kEHacaD_wQwqsBegQIKRAF&usg=AOvVaw1GiHMckfbfxb1c66EtSk9)

- Once someone shares content, instead of showing that content to just followers, and if it does well sharing it with nonfollowers → IG shares your content to both followers and non followers.
- Shows content to 50% followers, 50% nonfollowers (or 70/30 split). if engagement is good, only then will you be able to reach a bit of a wider audience of nonfollowers.
  - Now many creators complain about their content not being shown to their own followers



- Original content in feed posts are favored as opposed to reposting (i.e. direct reposting or reshared photos)
  - if you post unoriginal content, ig will try to identify the original content and direct traffic to the original creator/post
    - difficult for repost pages

## Section 4: Link Bank

### ebay

<https://innovation.ebayinc.com/tech/engineering/evolving-recommendations-a-personalized-user-based-ranking-model/>

<https://innovation.ebayinc.com/tech/engineering/building-a-deep-learning-based-retrieval-system-for-personalized-recommendations/>

<https://community.ebay.com/t5/Selling/The-shifting-change-of-technology-algorithms-opportunity-and/td-p/32890019>

<https://www.ebay.com/help/selling/listings/listing-tips/optimising-listings-best-match?id=4166>

<https://community.ebay.com/t5/Selling/Listings-at-top-of-page-Best-Match/td-p/32715680>

### instagram

[https://www.google.com/url?sa=t&source=web&rct=j&opi=89978449&url=https://www.instagram.com/mosseri/reel/Cs6gh\\_NgPF0/?hl=en&ved=2ahUKEwiPu7m8m-OGAxX-l4kEHacaD\\_wQwqsBegQIKRAF&usg=AOvVaw1GiHMckfbfxb1c66EtSk9](https://www.google.com/url?sa=t&source=web&rct=j&opi=89978449&url=https://www.instagram.com/mosseri/reel/Cs6gh_NgPF0/?hl=en&ved=2ahUKEwiPu7m8m-OGAxX-l4kEHacaD_wQwqsBegQIKRAF&usg=AOvVaw1GiHMckfbfxb1c66EtSk9)

[https://www.google.com/url?sa=t&source=web&rct=j&opi=89978449&url=https://www.instagram.com/mosseri/reel/Cs6gh\\_NgPF0/?hl=en&ved=2ahUKEwiPu7m8m-OGAxX-l4kEHacaD\\_wQwqsBegQIKRAF&usg=AOvVaw1GiHMckfbfxb1c66EtSk9](https://www.google.com/url?sa=t&source=web&rct=j&opi=89978449&url=https://www.instagram.com/mosseri/reel/Cs6gh_NgPF0/?hl=en&ved=2ahUKEwiPu7m8m-OGAxX-l4kEHacaD_wQwqsBegQIKRAF&usg=AOvVaw1GiHMckfbfxb1c66EtSk9)

[https://www.google.com/url?sa=t&source=web&rct=j&opi=89978449&url=https://www.instagram.com/mosseri/reel/Cs6gh\\_NgPF0/?hl=en&ved=2ahUKEwiPu7m8m-OGAxX-l4kEHacaD\\_wQwqsBegQIKRAF&usg=AOvVaw1GiHMckfbfxb1c66EtSk9](https://www.google.com/url?sa=t&source=web&rct=j&opi=89978449&url=https://www.instagram.com/mosseri/reel/Cs6gh_NgPF0/?hl=en&ved=2ahUKEwiPu7m8m-OGAxX-l4kEHacaD_wQwqsBegQIKRAF&usg=AOvVaw1GiHMckfbfxb1c66EtSk9)

<https://about.instagram.com/blog/announcements/instagram-ranking-explained>

<https://themarkup.org/automated-censorship/2024/03/01/how-automated-content-moderation-works-even-when-it-doesnt-work>

<https://medium.com/@visualsapi/unveiling-instagrams-content-moderation-dilemma-insights-and-solutions-f79dc952210d>

### depop

<https://depophelp.zendesk.com/hc/en-gb/articles/9422984899985-How-Depop-ranks-search-results-and-recommends-listings>

<https://depophelp.zendesk.com/hc/en-gb/articles/22567808120593-Content-Moderation-at-Depop>

<https://blog.depop.com/articles/depop-search-how-search-works-on-depop>

<https://www.debumpbot.com/post/how-to-get-on-the-depop-explore-page>

## Poshmark

Switching back and forth between "just shared" and other factors

<https://blog.poshmark.com/2022/02/18/a-message-from-our-svp-of-seller-experience/>


## Moderation

<https://www.theverge.com/2021/12/13/22826114/takedown-notices-online-thrift-shops-copyright-trademark>


## Comments

<https://umdearborn.edu/news/ais-mysterious-black-box-problem-explained>


Truly don't know what's happening with depop

 [https://www.reddit.com/r/Depop/comments/13sea3o/truly\\_dont\\_know\\_whats\\_happening\\_with\\_depop/?utm\\_source=share&utm\\_medium=ios\\_app&utm\\_name=ioscss&utm\\_content=2&utm\\_term=1](https://www.reddit.com/r/Depop/comments/13sea3o/truly_dont_know_whats_happening_with_depop/?utm_source=share&utm_medium=ios_app&utm_name=ioscss&utm_content=2&utm_term=1)

Figuring out the algorithm

 [https://www.reddit.com/r/Depop/comments/146kgfo/figuring\\_out\\_the\\_algorithm/](https://www.reddit.com/r/Depop/comments/146kgfo/figuring_out_the_algorithm/)


Getting on the explore page

 [https://www.reddit.com/r/Depop/comments/al6xep/getting\\_on\\_the\\_explore\\_page/](https://www.reddit.com/r/Depop/comments/al6xep/getting_on_the_explore_page/)


How I think the Depop algorithm currently works

 [https://www.reddit.com/r/Depop/comments/17szjbx/how\\_i\\_think\\_the\\_depop\\_algorithm\\_currently\\_works/](https://www.reddit.com/r/Depop/comments/17szjbx/how_i_think_the_depop_algorithm_currently_works/)


Does the algorithm punish you for being late on shipping?

 [https://www.reddit.com/r/Depop/comments/r7ayhx/does\\_the\\_algorithm\\_punish\\_you\\_for\\_being\\_late\\_on/](https://www.reddit.com/r/Depop/comments/r7ayhx/does_the_algorithm_punish_you_for_being_late_on/)

What did you do lately to make the algorithm like you?

 [https://www.reddit.com/r/eBaySellerAdvice/comments/y84mda/what\\_did\\_you\\_do\\_lately\\_to\\_make\\_the\\_algorithm\\_like/](https://www.reddit.com/r/eBaySellerAdvice/comments/y84mda/what_did_you_do_lately_to_make_the_algorithm_like/)

Ebay search algorithm being weird and not showing my listings

 [https://www.reddit.com/r/eBaySellerAdvice/comments/13njwcp/ebay\\_search\\_algorithm\\_being\\_weird\\_and\\_not\\_showing/](https://www.reddit.com/r/eBaySellerAdvice/comments/13njwcp/ebay_search_algorithm_being_weird_and_not_showing/)

EXPLORE PAGE HACK? Or Better method!

 [https://www.reddit.com/r/InstagramMarketing/comments/9pn65w/explore\\_page\\_hack\\_or\\_better\\_method/](https://www.reddit.com/r/InstagramMarketing/comments/9pn65w/explore_page_hack_or_better_method/)

Istg depop customer service is literal ai there telling me my listing of a camera goes against violations when there is literally and option for cam

 [https://www.reddit.com/r/Depop/comments/14q3okx/istg\\_depop\\_customer\\_service\\_is\\_literal\\_ai\\_there/](https://www.reddit.com/r/Depop/comments/14q3okx/istg_depop_customer_service_is_literal_ai_there/)