Algorithm exposed:
investigating Youtube

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The Faults Beyond Our Algorithms
The offline roots of online radicalization.

Algorithms Won’t Fix What’s Wrong With YouTube
What seems like a sensible decision to an algorithm can be a terrible misstep to a human.

As algorithms take over, YouTube's recommendations highlight a human problem
A supercomputer playing chess against your mind to get you to keep watching.

YouTube, the Great Radicalizer
research questions e.g:

- What does polarisation look like on Youtube? (political vs a-political)
- Which are the variables that impact the most? (google / exposure time / past behaviors / personalized profiles)
- How can we distinguish between personalization and randomness?
Figure 7: Deep ranking network architecture depicting embedded categorical features (both univalent and multivalent) with shared embeddings and powers of normalized continuous features. All layers are fully connected. In practice, hundreds of features are fed into the network.

(Covington, Adams and Sagrin, 2016)
https://youtube.tracking.exposed
Which variables influence the personalisation of Youtube suggestions?

Language
- Watch a famous music video:
  1. Clean Browser
  2. French Google search
  3. French Youtube search

Politisation
- Watch an "a-political" video:
  1. Clean Browser
  2. Logged in

Interactions
- Watch a political video:
  1. Clean Browser
  2. Logged in
  3. Long watching CNN
  4. Short watching CNN

Data analysis

Legend:
- Unpersonalised
- Uncontrolled personalisation
- Controlled personalisation
Personalized vs clean

Interactions

Watch a political video

1. Clean Browser

2. Logged in

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Watching a political video with a clean browser
Watching a political video with our personal Youtube account
Politics vs entertainment

1. Clean Browser
2. Logged in

Watch an "a-political" video
Watch a political video

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Cutest Cats Compilation 2017
Watching an «a-political» video on a clean browser or with our personal Youtube account

Cutest Cats Compilation 2017

Legend

- Orange: Recommended for you
- Teal: Suggested to all the users
- Number of occurrences

93% Clean browser
72% Youtube account
7%
Watching a political video on a clean browser or with our personal Youtube account.

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Legend:
- Yellow: Recommended for you
- Green: Suggested to all the users
- Orange: Number of occurrences

Clean browser: 100%
Youtube account: 55%
Language and localization

1. Clean Browser
2. French Google search
3. French Youtube search
4. Korean Google search
5. Korean Youtube search

PSY - GANGNAM STYLE
과학적으로 입증된 배르게 살빼는 방법 TOP9 - YouTube
https://www.youtube.com/watch?v=Ikz0rFe0PEE • Vertaal deze pagina

운동 안하고 쉽게 살빼는 방법 알리드립니다요! - YouTube
https://www.youtube.com/watch?v=9QIYo3rXDK • Vertaal deze pagina
3 jun 2016 - 운동 안하고 쉽게 살빼는 방법이 있다면 모든 병들이 쉽게 다이어트 할 수 있겠죠. 그 방법을 맛은점유부와 비만센터 '영솔문비만센터'에서 알려...

[다이어트 교실] 살빼는 방법 최초공개!! 8시간만에 6kg 체중감량 실험 ...
https://www.youtube.com/watch?v=9JCH3uY-hs • Vertaal deze pagina
20 dec '17 - 운동선수 출신의 살아있는 소비력이 알려주는 살빼는 방법과 전 8시간만에 몸을 얼마나 빠를 수 있을까? 여러분들의 모든 궁금증을 해결해드리겠습니다.

운동 없이 살빼는 방법 12가지 - WIKITREE
https://www.wikitree.co.kr/190741 • Vertaal deze pagina
명품 브랜드 사설의 다이어트 팁 라거에서는 다양한의 수리를 하기 위해 18개월 동안 무려 42kg을 감량했다. 그다obao로 하루와 하루에 턱없이 아끼자마자 한...

별리 살빼는 방법: 과학에 근거한 3가지 단계 :: 불로구
https://tongui.tistory.com/48 • Vertaal deze pagina
24 jun '16 - 불리 살빼는 방법: 과학에 근거한 3가지 단계 살을 많이 빼는 방법은 여러가지가 있습니다. 그러나 그 중 많은 방법은 배고픔에 어덕이게 만들어거나...

단기간 살빼는법 -17kg 감량후기 : 네이버 포스트
https://m.post.naver.com/viewer/postView.nhn?volumeNo... • Vertaal deze pagina
26 sep '17 - 그래서 제가 선택한 방법이 식단조절 하면서 살을 빼는 방법! 이 방법으로 살을 빼니가 진짜 방법토 너무 간信じ고 살빼는중 단계 감소나 없이...
API vs actual recommendation

Legend

- Number of occurrences

Language and localization

- Youtube API
- Clean browser
- Personalisation
Every second matters

Interactions

Watch a political video

1. Clean Browser
2. Logged in

3. Long watching CNN
4. Short watching CNN

Long watching Fox News
Short watching Fox News

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Every trace matters

- Interactions
- Watch a political video
  - 1. Clean Browser
  - 2. Logged in
  - 3. Long watching CNN
  - 4. Short watching CNN
  - Long watching Fox News
  - Short watching Fox News

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Clean vs. Personal: Testing difference in means

Legend
- Clean browser
- Both watchers of CNN and Fox News

Conclusion
Clean browser → Less personalized
Fox vs. CNN: Proportions of Conservative Sources

Legend
- FOX News watchers
- CNN video watchers

Conclusion
Watching FOX video → More conservative sources recommended
“The basic structure of YouTube’s recommendation algorithm might’ve worked fine for its core types of content — like cat videos, gaming, and music. But as YouTube becomes more central in people’s information and news consumption, Chaslot worries recommendations will push people further to extremes — whether they want it or not — just because it’s in YouTube’s interest to keep us watching for as long as possible.”
Articles

https://www.wired.com/story/youtube-video-recommendations-changes/ (26th June 2019)


https://thenextweb.com/google/2019/06/14/youtube-recommendations-toxic-algorithm-google-ai/ (Maack, 2019)