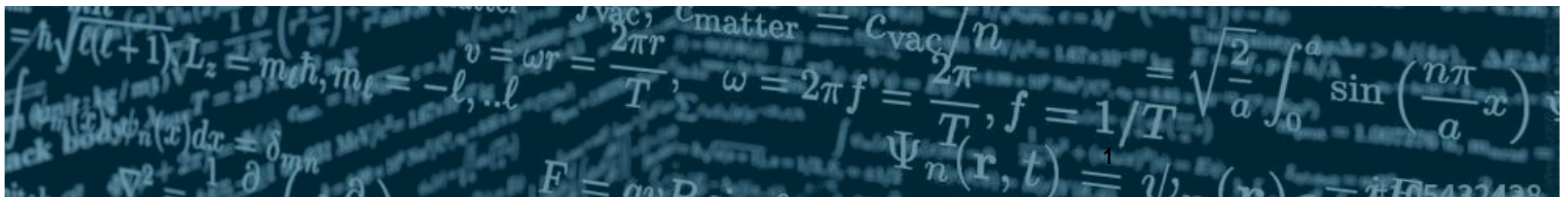


# Machine Learning @Schibsted Media



Atelach Alemu Argaw  
June, 2018



## ML @Schibsted Media

- 1 Automatic Tag Suggestion
- 2 Personalization : Front Page
- 3 Recommendation : Video
- 4 User Segments : Targeted Ads
- 5 Propensity Models
- \* Progress & challenges

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1

# Automatic Tag Suggestion


TISDAG 7 FEBRUARI 2017

**SPORT**  
BLADET

START SPORT TV PLUS NÖJE LEDARE KULTUR DEBATT

PREMIER LEAGUE 2016/17

**Sprickan i Arsenal:  
Wenger tog ut fel lag**  
Ifrågasätter elvan: "På bekostnad av andra"



**ÄMNEN**

- Premier League 2016/17
- Theo Walcott
- Arsene Wenger
- Premier League
- Danny Welbeck
- Gabriel Paulista
- Arsenal FC
- Laurent Koscielny

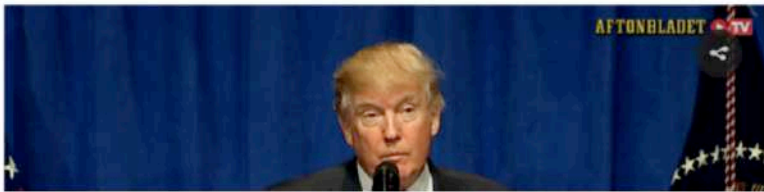
TISDAG 7 FEBRUARI 2017

**AFTONBLADET**

START SPORT TV PLUS NÖJE LEDARE KULTUR DEBATT

DONALD TRUMP – USA:S NYE PRESIDENT

**Donald Trump: "Media  
mörkar terrordåd"**



**ÄMNEN**

- Donald Trump - USA:s nye president
- Donald Trump
- Nato
- Försvarspolitik

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2

# Personalization: Front Page

## Tracking

User Behaviour

	X	Y	Z	Q
	1	0	1	0
	1	1	0	0
	0	0	1	1
	1	7	0	0

## Content

Content



Model  
= UB + Content

Personalized  
content

# Personalization

## Relevant For Our Users?

### Commonly raised issues

- Information bubble
- Ability to choose
- Duty to inform/close knowledge gap

\*Editor's picks

\*News room specific ranking

\*Discovery – not competing with front page

\*Make data informed decisions



# Data Informed Decisions



## DEFINE CLEAR METRICS

- Click through rates
- View through rates
- Engagement
- Churn/subscription



## MEASURE AND OPTIMIZE



## MAKE DATA INFORMED DECISIONS

- Evidence from data
- Experience and intuition



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# Usecase 1: Next Video

Source of the video  
Internal

Age limit:  
Not applicable

Notes

Set next video by name or id:

Set playlist

TONO registered

Show  
 Ads  In newest  Views  Comments  Embed code  In Playlist Generator


Flight time from  
2018-05-03 10:19 Now Clear

Flight time to  
[select](#)

Additional properties

Images Manage images associated with the video

Main image



Front image

Featured image

Image credits

Image description

# Usecase 2: Recommend Related Videos

TORS DAG 3 MAJ 2018 Degens namn: John, Jane

## AFTONBLADET

VÄDER  
STOCKHOLM 8°

INLOGGAD PREMIUM  
Carl Svärd

NYHETER SPORT NÖJE KULTUR LEDARE DEBATT TV PLUS SENASTE NYTT

A-Ö OM



### "Skam" genomgår en könsförändring?

Scenen hintar om stora twisten i succéserien



25 april 2018 © 15:35

#### REKOMMENDERAT

ANNONS STUDIO  
ODDSET

▶ TV Berättar om  
skräckupplevelsen: "Spydde  
första gången"



▶ TV Nya 'Skams' hemliga  
koppling till Sverige



▶ TV OMG News - Säsong 9  
avsnitt 13



▶ TV Här gör Skam-hunken  
vågade fortsättningen



▶ TV Farliga trenden med  
bröstvårten: "Galet"



▶ TV Plötsligt avslöjar Jesper  
pinsamma sexminnet



▶ TV Hon yogar naken och  
ingen märker något



▶ TV Scenen fick brytas – nu  
avslöjar han snusket



```
foreach ($taxes as $tax_id => $value) {  
    if (isset($old_taxes[$tax_id])) {
```

```
389  
390  
return this
```

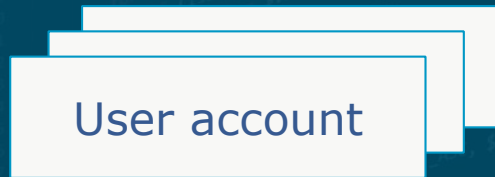
at.to(pos) }

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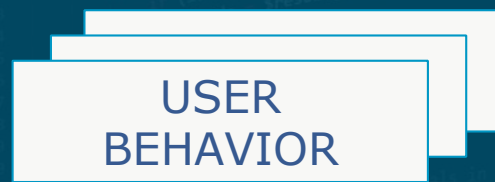
### 3 Ad Targeting : Age, Gender Prediction

SPID

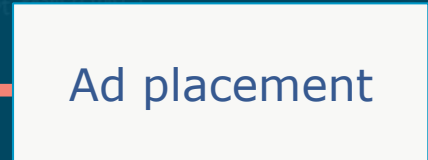
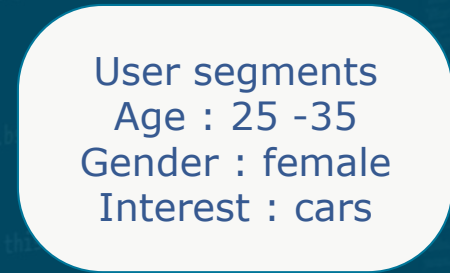


User account

Tracking



USER BEHAVIOR



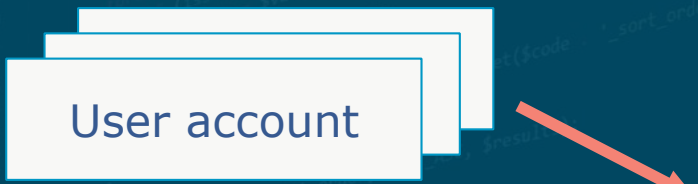
Logs - viewed, clicked, bought

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### 3 Propensity : subscription & churn

SPID



Tracking



## Progress & Challenges

### Progress:

- Availability of rapidly evolving technology
- Ability to rather quickly get up and running
- Privacy consciousness

### Challenges

- Privacy considerations
- Not a one-off effort
- Engineering e.g. data pipelines, experimentation



**THANK YOU!**

