

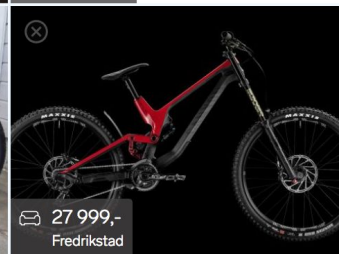
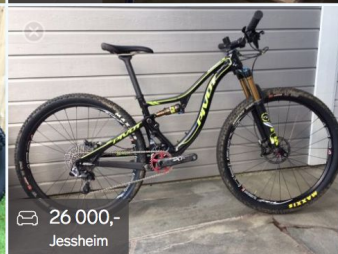
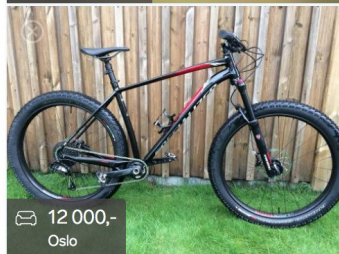
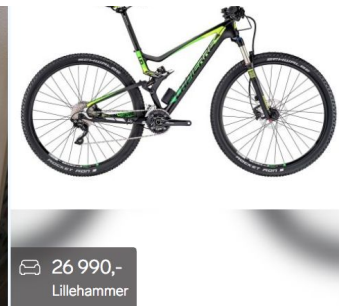
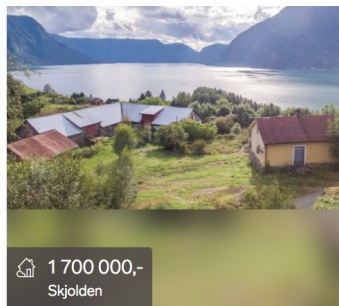


# Machine Learning @ FINN.no



Simen Eide  
Twitter: @simeneide

# Recommendations



# Machine learning Applications

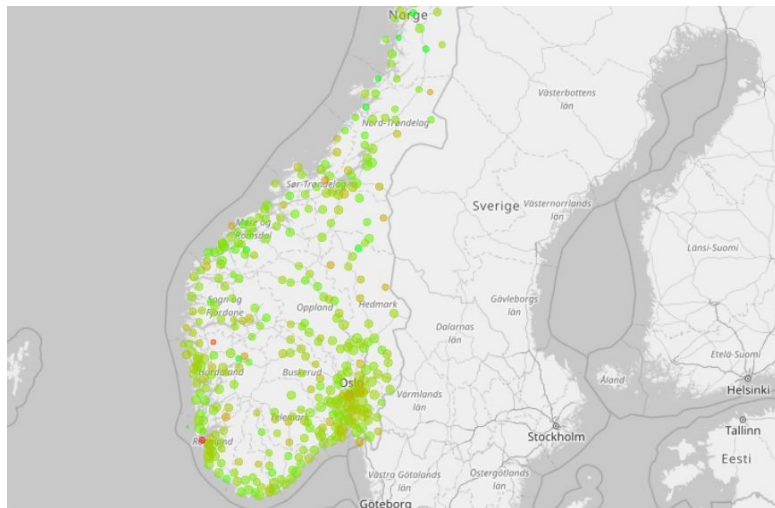


Estimert annonseringspris for denne bilen

173600 - 202400 kr.

Vurderingen indikerer omtrentlig utropspris ved annonsering som privatperson, med forbehold om bilens tilstand og utstyrsnivå.

[Se detaljert informasjon](#)



Overskrift:

Sted / postnummer:

Beskrivelse av småjobben:

Type småjobb:

+ Bilder

+ Tidspunkt

Lønn for småjobben:  kr

Andre betaler fra 200 til 5,000 for lignende jobber

[Publiser småjobben](#)

## Target

Velg kategori for annonsen

"gitar" tror vi passer best i kategorien:

- ☒ Fritid, hobby og underholdning/Musikkinstrumenter/Gitarer
- ☐ Elektronikk og hvidevarer/Spill og konsoll/Spill
- ☐ Fritid, hobby og underholdning/Musikkinstrumenter/Lydstyr

[Gå videre](#)

# Recommend: 800'000 daily clicks



Internal



Reise



Oppdrag



Nyttekjøretøy

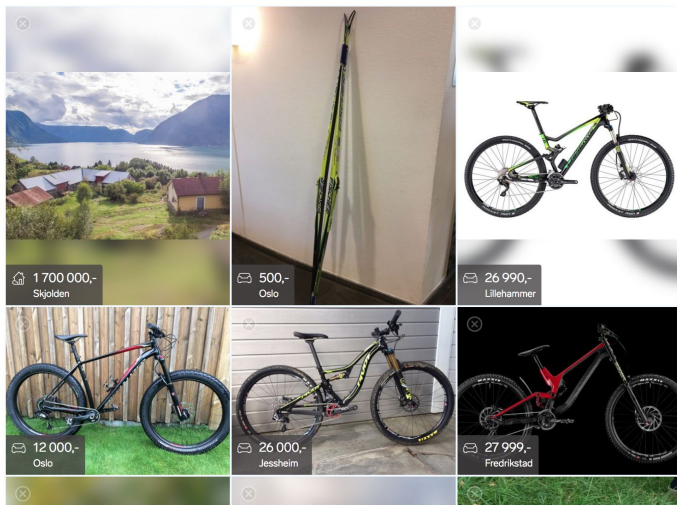


Kart



Meteplassen

Anbefalinger



External





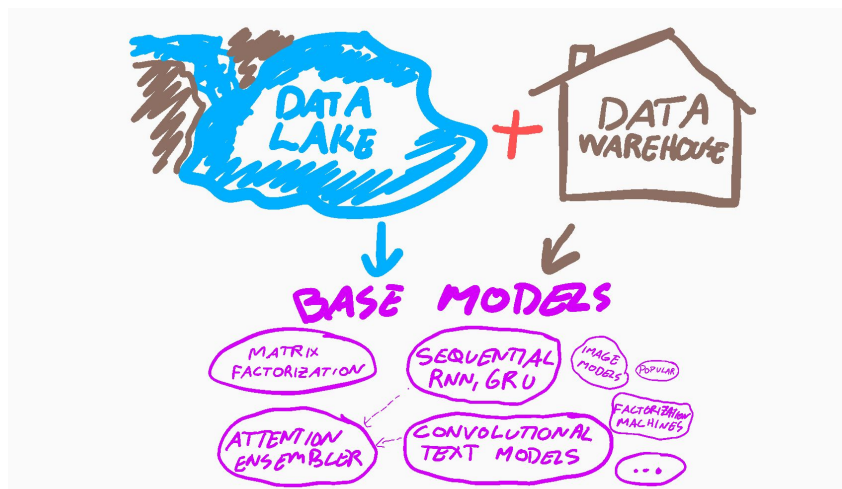
Model Zoo



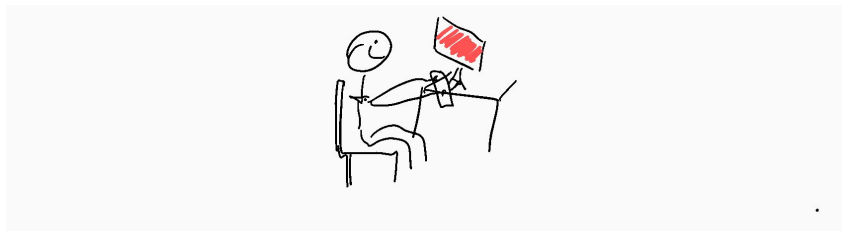


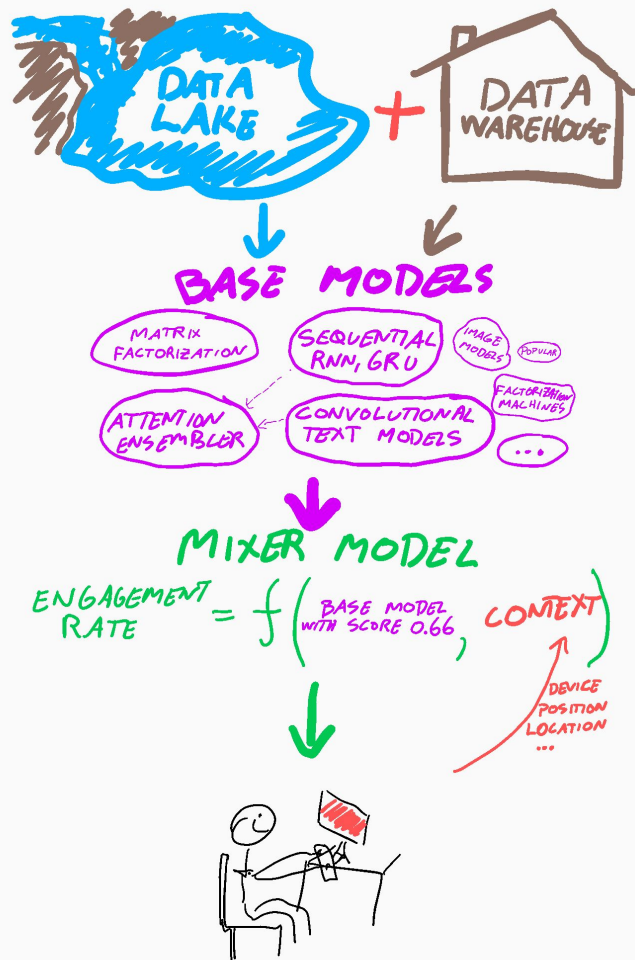
Model Zoo





Model Zoo





Model Zoo



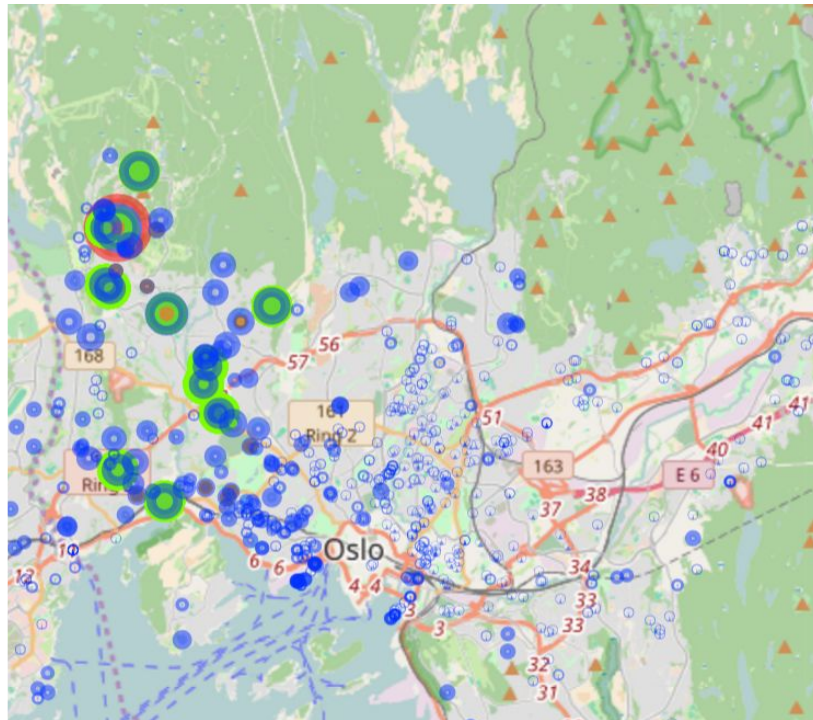
# Matrix Factorization



- Based only on pageviews
- Works well out-of-box, better when tuned
- Use latent variables

Some downsides:

- Cold-start
- Alternative signals
- Little flexibility



# Deep NLP Recommender

(tech.finn.no)



♡ Lagre annonsen ✉ f t

Taekwondo / Judo / Karate belter

Lignende annonser



EKTE SKINN sko til salg for 120kr  
120,- Skjetten



Frosk Kostyme XL-XXL (130113)  
479,- Nederland



leke med music  
100,- Dal

*Collaborative filtering recommendations*

Lignende annonser



Sport - kickboksing  
1 000,- Asker



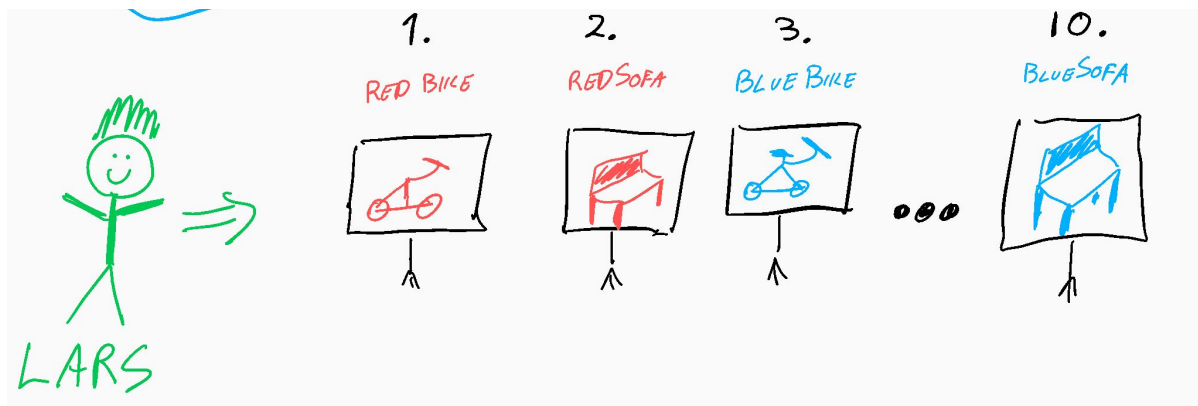
Taekwon-do drakt str. 150. med belte  
249,- Reyneberg



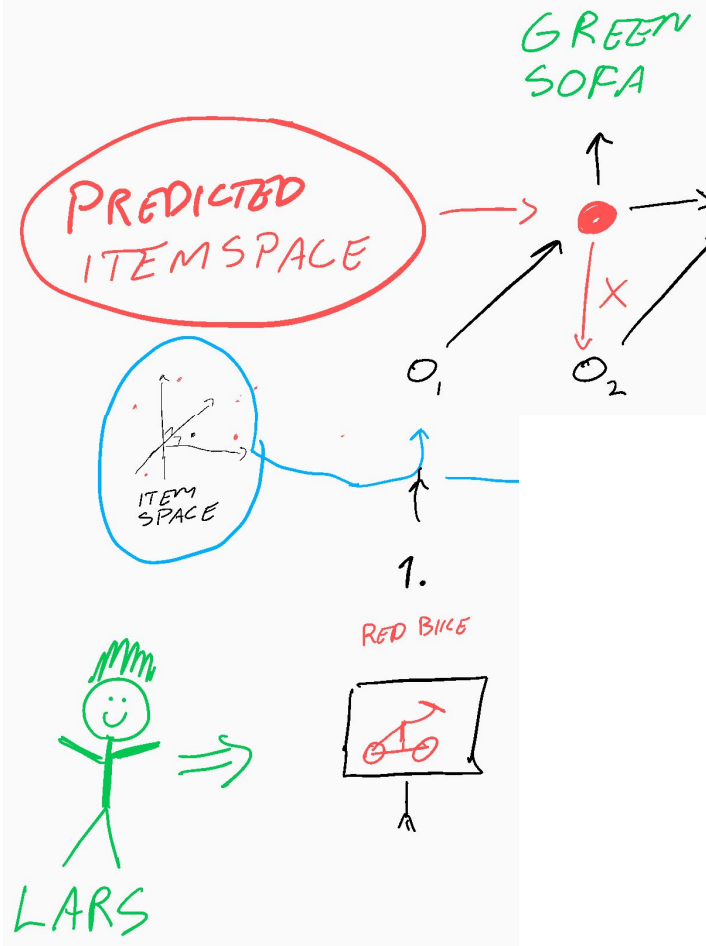
Taekwon-Do-drakter  
350,- Tanem

*NLP Recommendations*

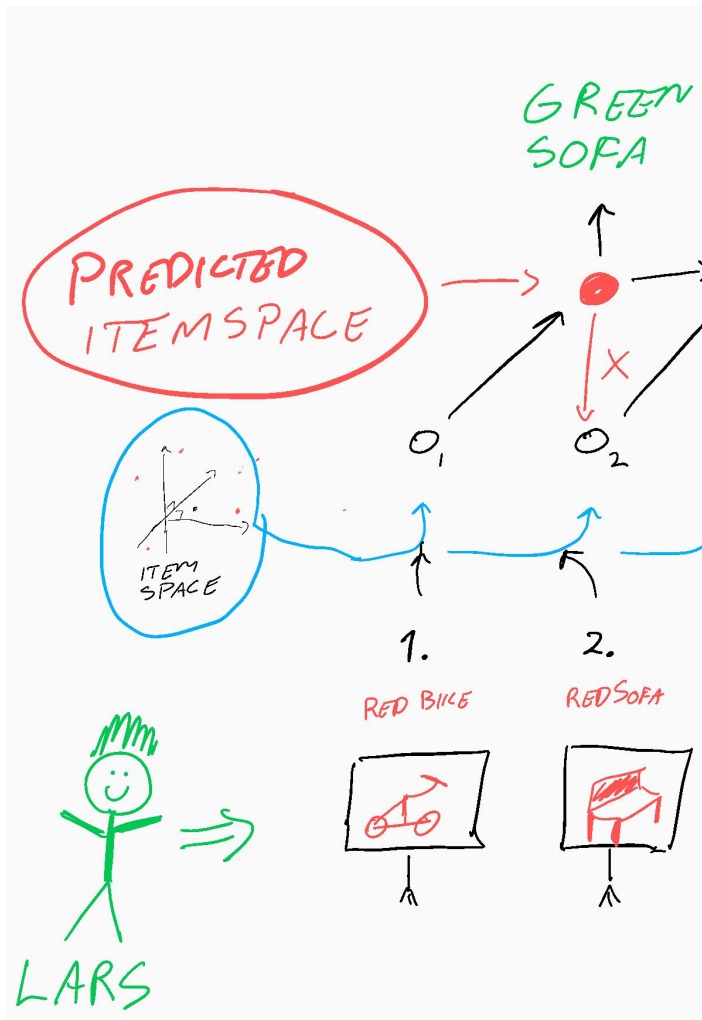
# Sequential



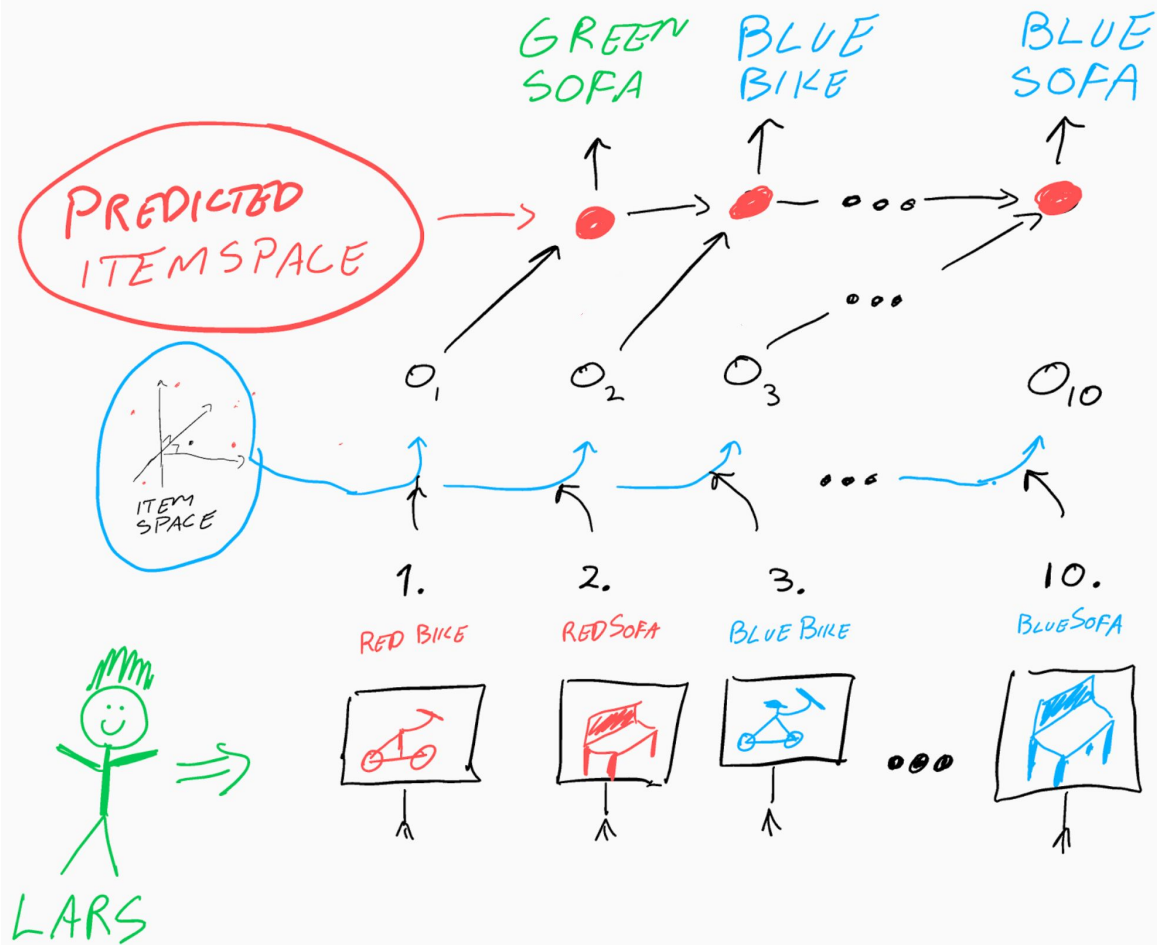
# Sequential



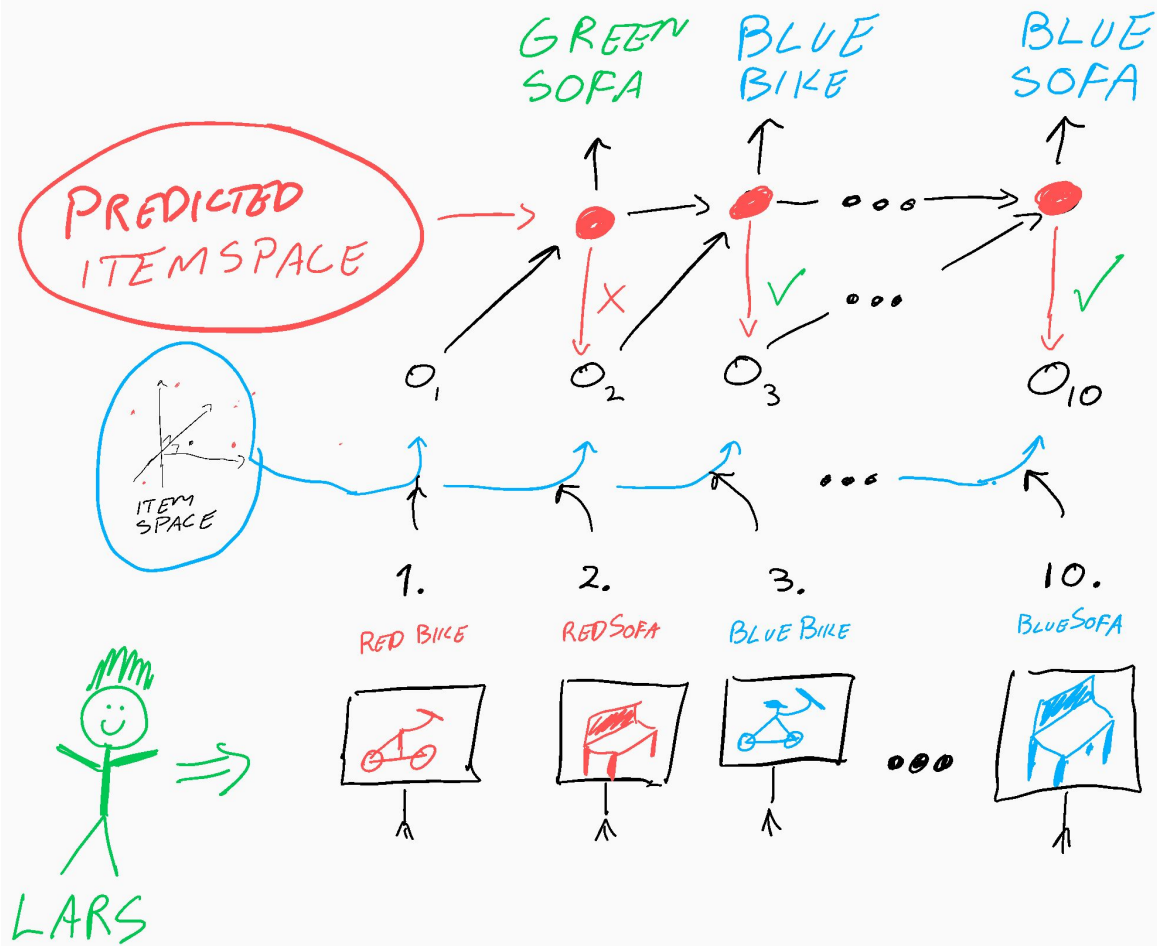
# Sequential



# Sequential



# Sequential (backprop)





# Test Procedure

1. Idea
2. Offline test (cheap)
3. Online test

---





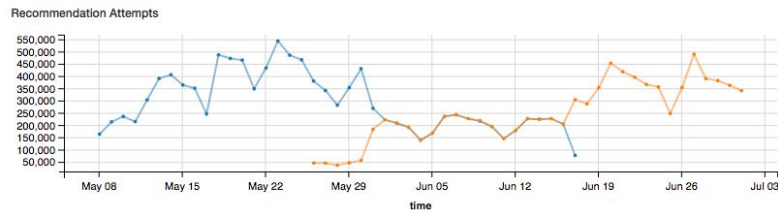
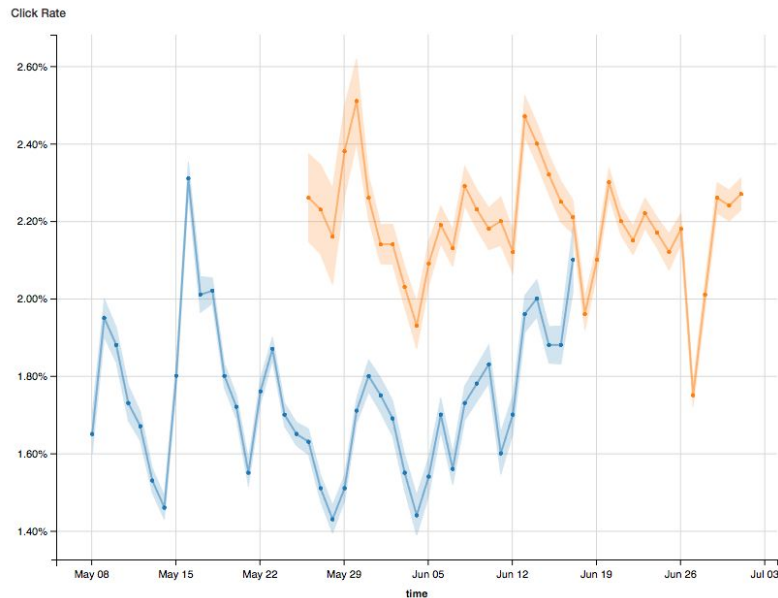
# Online Test: A/B test



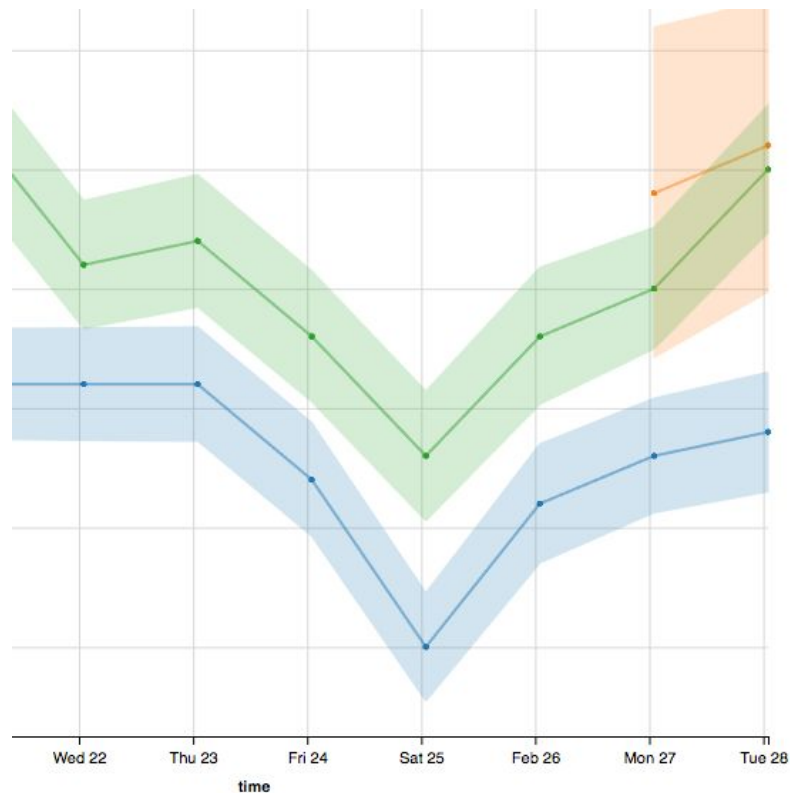
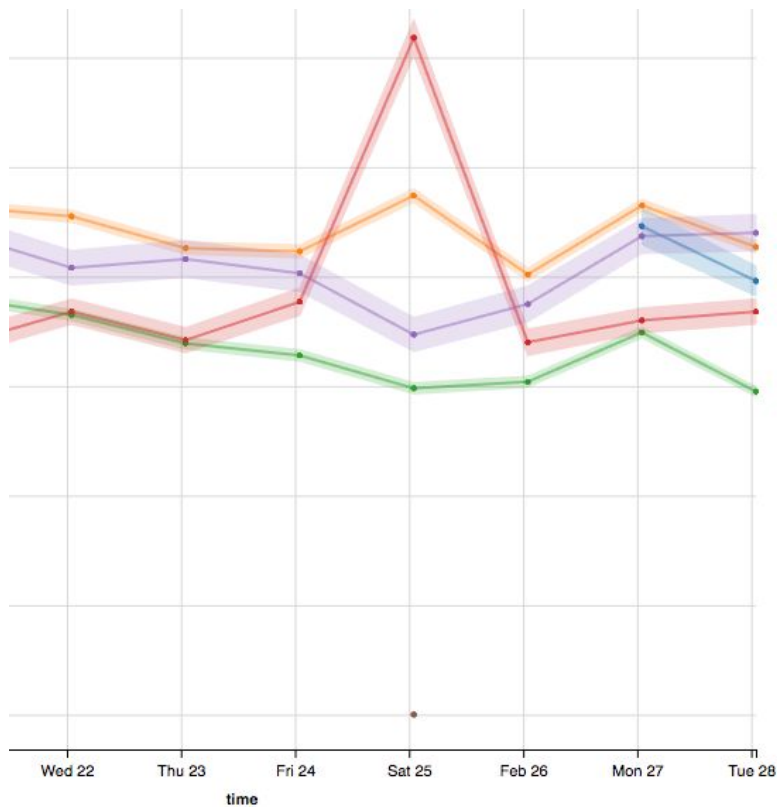
- Turn on 10% traffic on challenger
- Does it seem to work? Increase
- Turn off worst model “when it seems obvious”
- If in doubt, keep it simple

Many simplifications:

- No-sticky user
- Rest of finn is dynamic



# We are A/B-testing ALL THE TIME



# Going forward

- Auto tune Mixer Models
- Personalized Search
- Image Search & Recommendation
- “Neural” recommended search

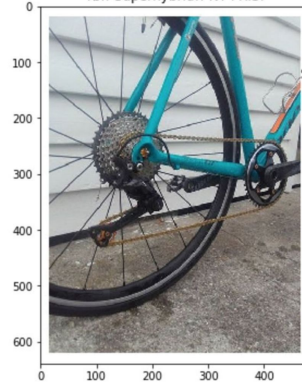
[simeneide.github.io](https://simeneide.github.io)

Twitter: @SimenEide

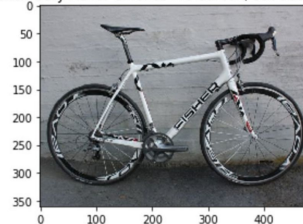


Query: landeveissykkel

Tøff Superhybrid!! NY PRIS!



Stroken Gary Fisher Chronus Pro Carbon, Str. 58cm. 6,9 kgCross/Gravel sykkel All-City Macho King



Query: stisykkel

Santa Cruz Blur xc full Carbon ca 11,5 kg 2012



CANNONDALE HABIT CARBON SE



Trek Stache 7 2016 str 17,5 selges.

