Finding relevancy

Improving your application search bar!

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Today's goal

Learn about search, relevancy and the user perspective!

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The ultimate search experience

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Google Search I'm Feeling Lucky

Google offered in: Deutsch

Google

Advanced Search

Find pages with...

		To do this in the search box.
all these words:	foo	Type the important words: `tri-colour rat terrier`
this exact word or phrase:		Put exact words in quotes: `"rat terrier"`
any of these words:		Type `OR` between all the words you want: `miniature OR standard`
none of these words:		Put a minus sign just before words that you don't want: `-rodent, -"Jack Russell"`
numbers ranging from:	to	Put two full stops between the numbers and add a unit of measurement: `10..35 kg, £300..£500, 2010..2011`

Then narrow your results by...

language:	any language	Find pages in the language that you select.
region:	any region	Find pages published in a particular region.
last update:	anytime	Find pages updated within the time that you specify.
site or domain:		Search one site (like `wikipedia.org`) or limit your results to a domain like `.edu`, `.org` or `.gov`
terms appearing:	anywhere in the page	Search for terms in the whole page, page title or web address, or links to the page you're looking for.
SafeSearch:	Show explicit results	Tell SafeSearch whether to filter sexually explicit content.
file type:	any format	Find pages in the format that you prefer.
usage rights:	all	Find pages that you are free to use yourself.

Advanced Search

The ultimate search experience: Query intent

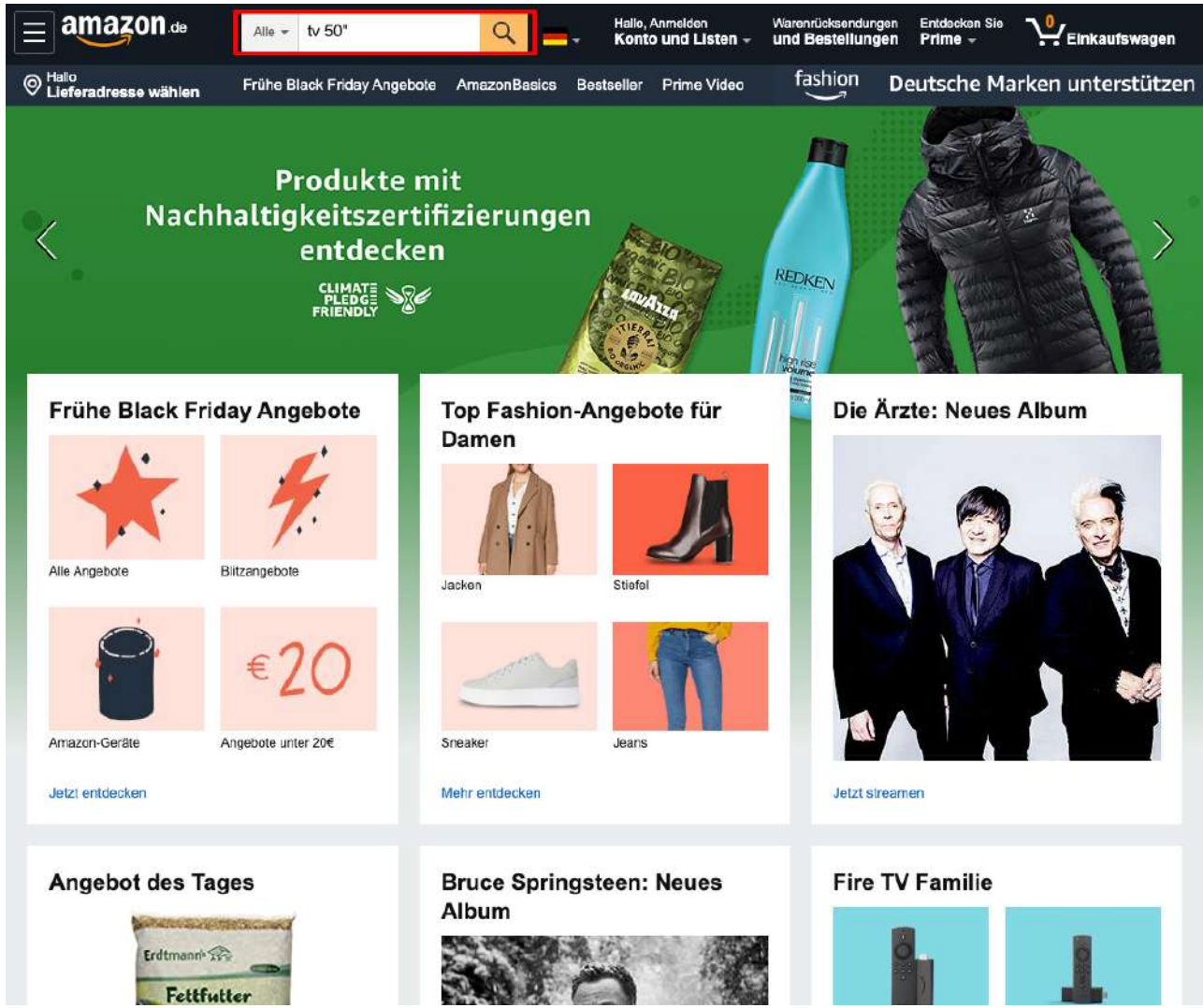
- `stock crash 2008`
- `tomorrow's temperature`
- `barack obama age`
- `twitter`
- `cheap nike hoodie red xl`

The ultimate search experience: Query intent

- Extremely generic
- Rarely needed for most web applications
- Many search use-cases are specialized
  - E-Commerce
  - News
  - Social network

E-Commerce

- Start with a full text search



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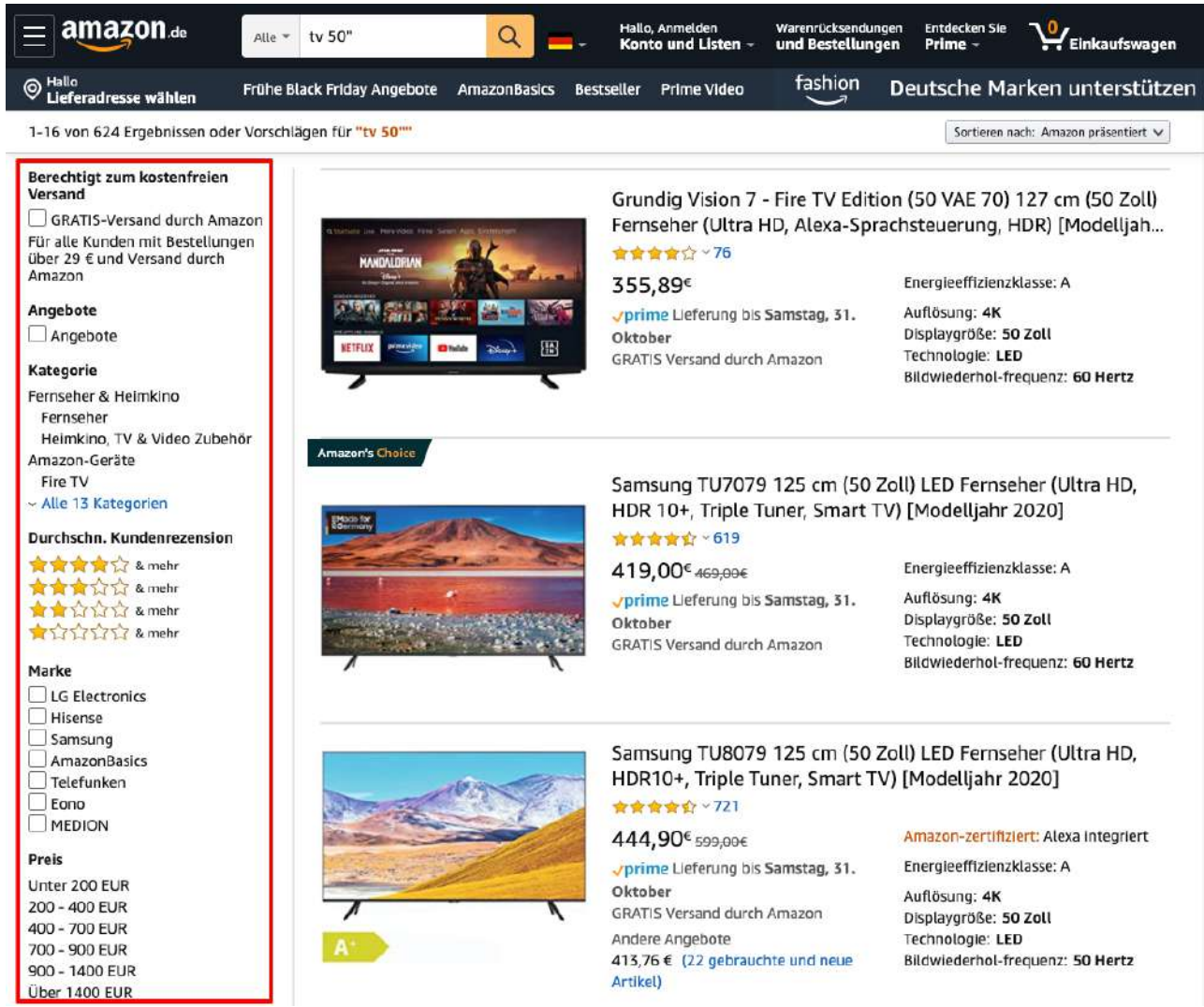
E-Commerce

- Start with a full text search
- Drill down via facetted navigation



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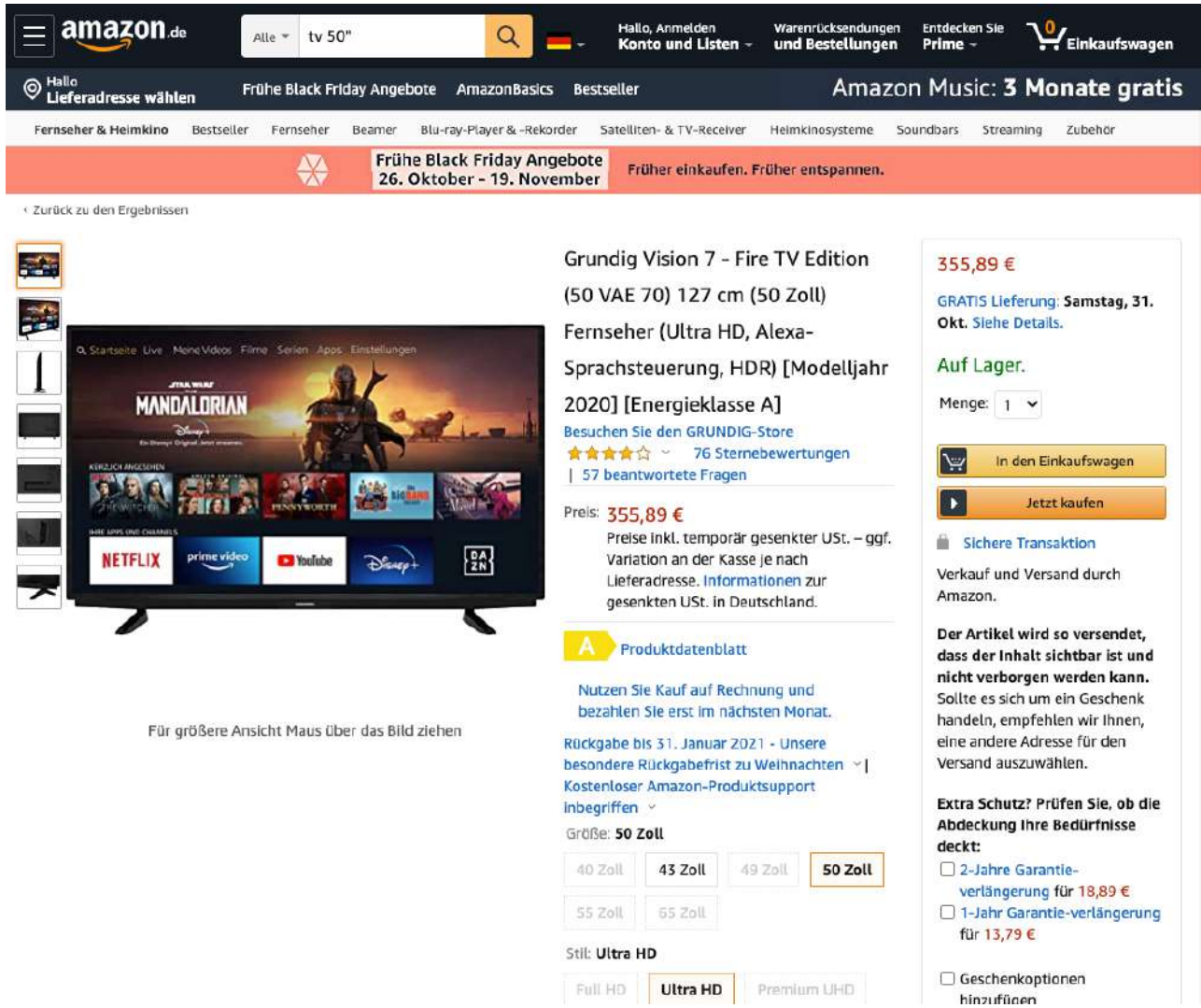
E-Commerce

- Start with a full text search
- Drill down via facetted navigation
- Select product



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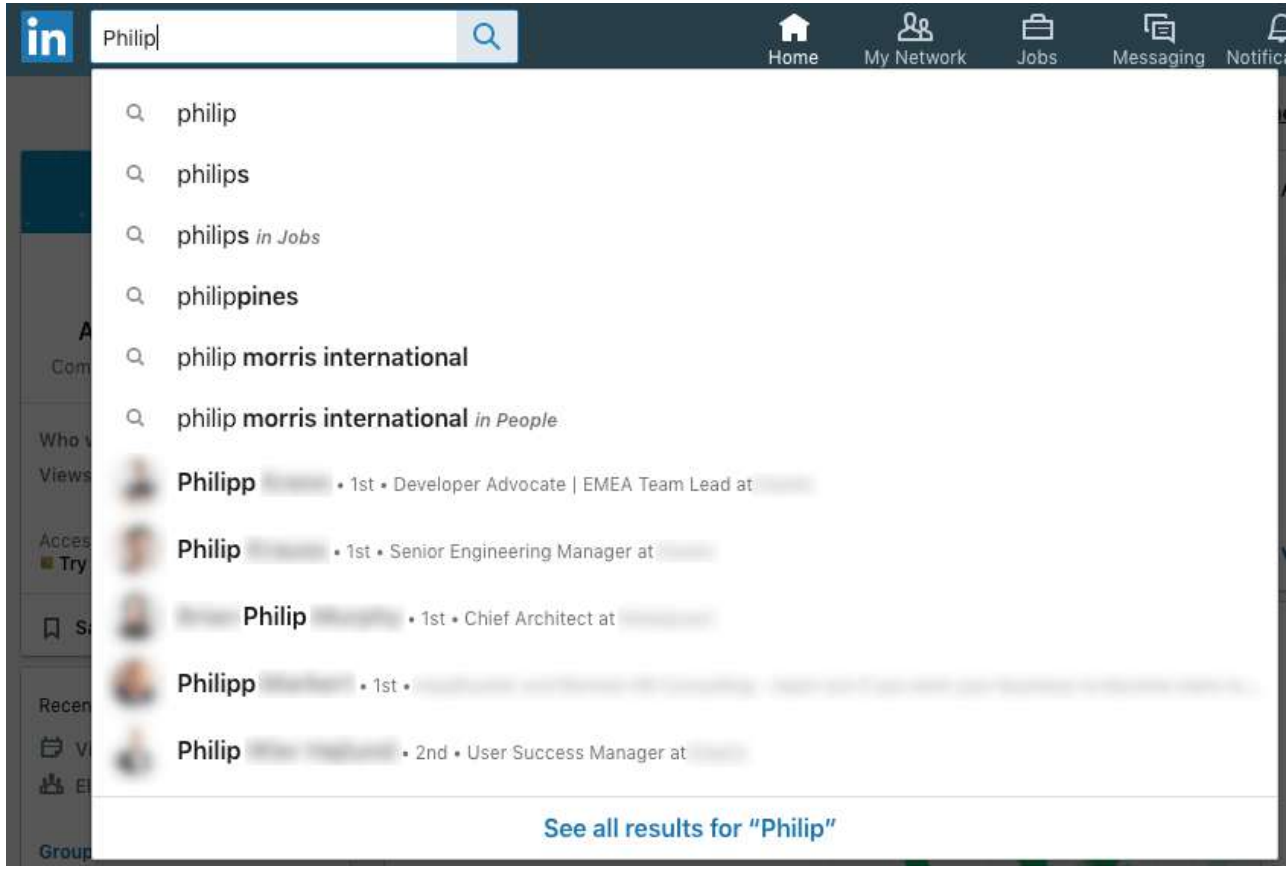
The ultimate search experience: Commercial Intent

- Scoring is never neutral, influencing factors (E-Commerce)
  - Popularity
  - Profit
  - Availability
  - Previous searches
  - Previous purchases
  - Cross/Upselling products

LinkedIn Search

- Search for first name
- Search for last name
- Prefix search
- 1st degree > 2nd degree
- 2nd degree > 3rd degree



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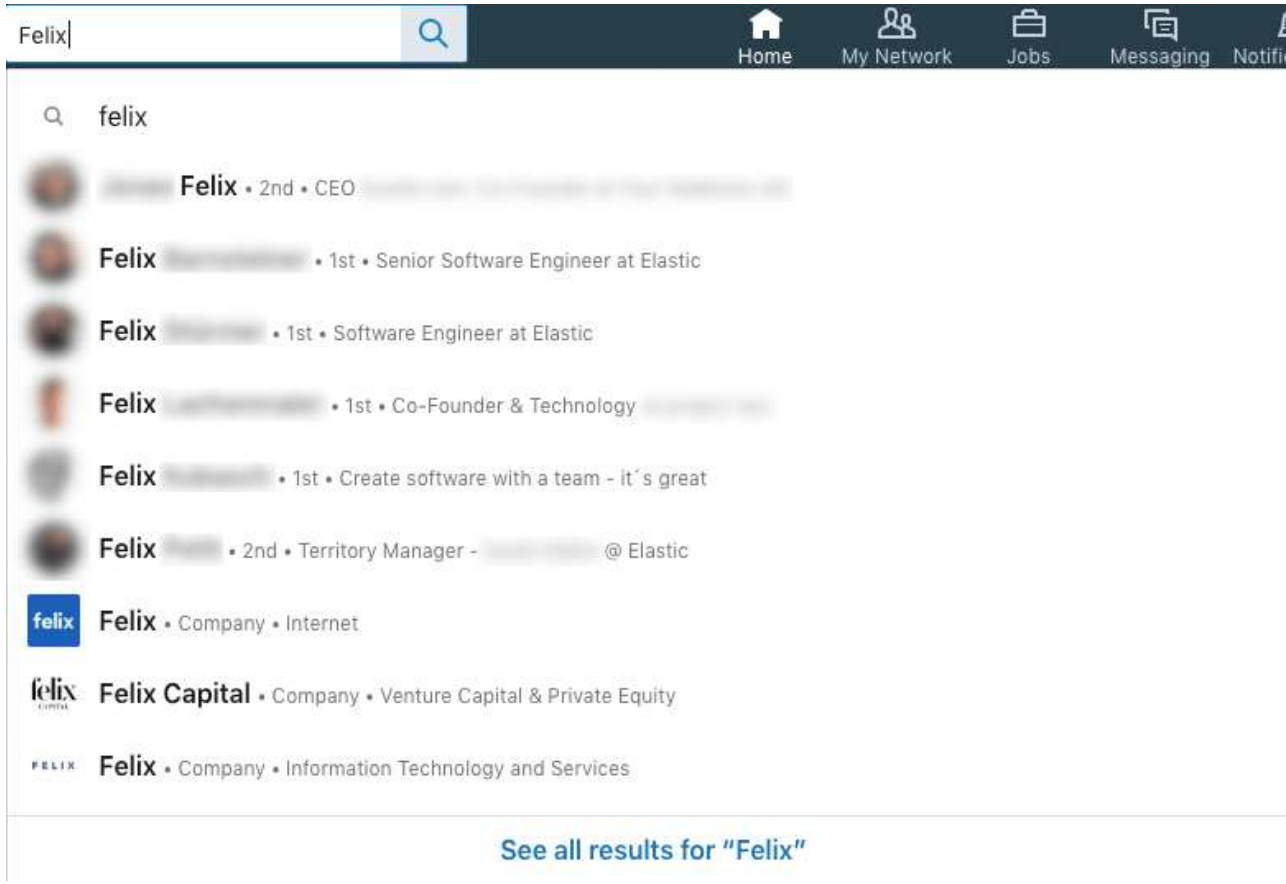
LinkedIn Search

- Rare surname more important than first name



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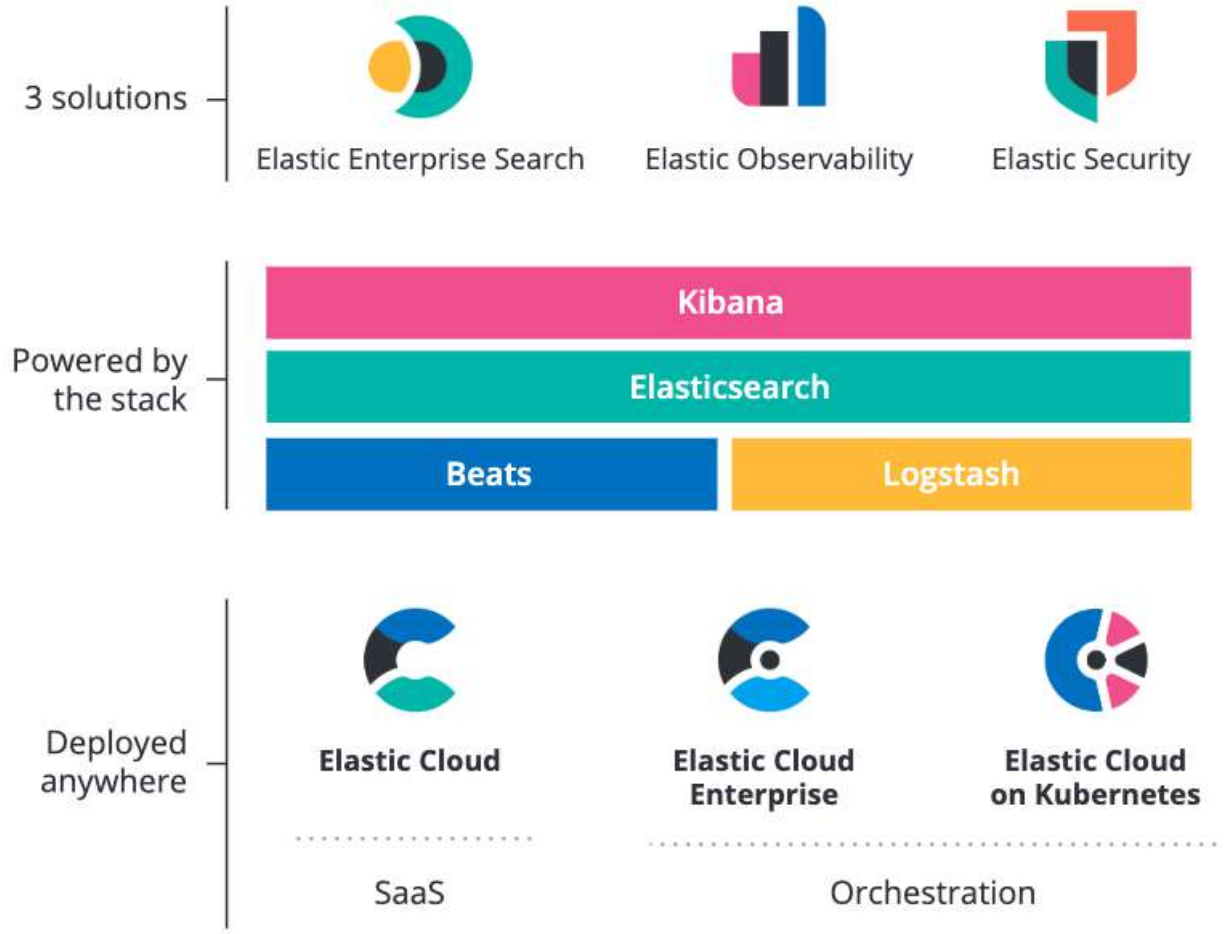
Let's build such a person search using Elasticsearch!

Product Overview



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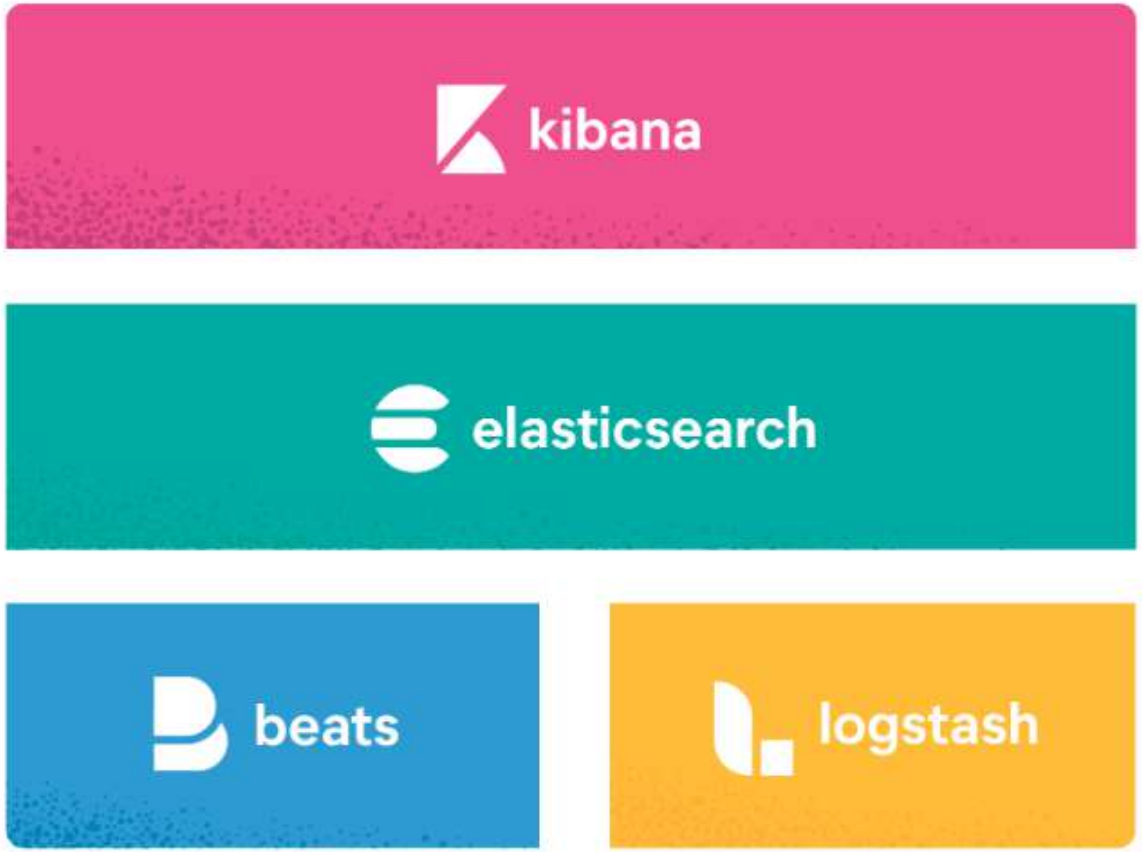
Elastic Stack



Elasticsearch in one minute

- Search Engine (FTS, Analytics, Geo), near real-time
- Distributed, scalable, highly available, resilient
- Interface: HTTP & JSON

Sample app: Social network

- Entity: **Person**
- Fields:
  - Matching: First & last name
  - Scoring: Employer & direct contacts
  - Meta: Title & image

Sample app: Social network

```
{
  "name" : {
    "last" : "Reelsen",
    "first" : "Alexander"
  },
  "employer" : "Elastic",
  "title" : "Community Advocate",
  "image" : "1",
  "contacts" : [ "philippk", "philipk", "philippl" ]
}
```

Demo

Run node application

```
git clone https://github.com/spinscale/social-network-search-sample
cd social-network-search-sample
npm install
# create static build
npm run build
npm run start
# or for development mode w/ livereload
npm run build
```

Install Elasticsearch

```
# https://www.elastic.co/downloads/elasticsearch
wget https://artifacts.elastic.co/downloads/elasticsearch/elasticsearch-7.9.3-darwin-x86_64.tar.gz
# wget https://artifacts.elastic.co/downloads/elasticsearch/elasticsearch-7.9.3-linux-x86_64.tar.gz
# wget https://artifacts.elastic.co/downloads/elasticsearch/elasticsearch-7.9.3-windows-x86_64.zip

tar zxf elasticsearch-7.9.3-darwin-x86_64.tar.gz
cd elasticsearch-7.9.3

./bin/elasticsearch
```

Install Kibana

```
# https://www.elastic.co/downloads/kibana
wget https://artifacts.elastic.co/downloads/kibana/kibana-7.9.3-darwin-x86_64.tar.gz
# wget https://artifacts.elastic.co/downloads/kibana/kibana-7.9.3-linux-x86_64.tar.gz
# wget https://artifacts.elastic.co/downloads/kibana/kibana-7.9.3-windows-x86_64.zip

tar zxf kibana-7.9.3-darwin-x86_64.tar.gz
cd kibana-7.9.3
./bin/kibana
```

Point your browser to http://localhost:5601/

MySocialNetwork Profile Contacts Search Admin

Profile

Alexander Reelsen

Community Advocate at Elastic

3 Contacts

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MySocialNetwork Profile Contacts Search Admin

Contacts

Philip Kredible
Team Lead at Elastic

Philipp Krenn
Community Advocate at Elastic

Philipp Laughable
Senior Software Engineer at FancyWorks

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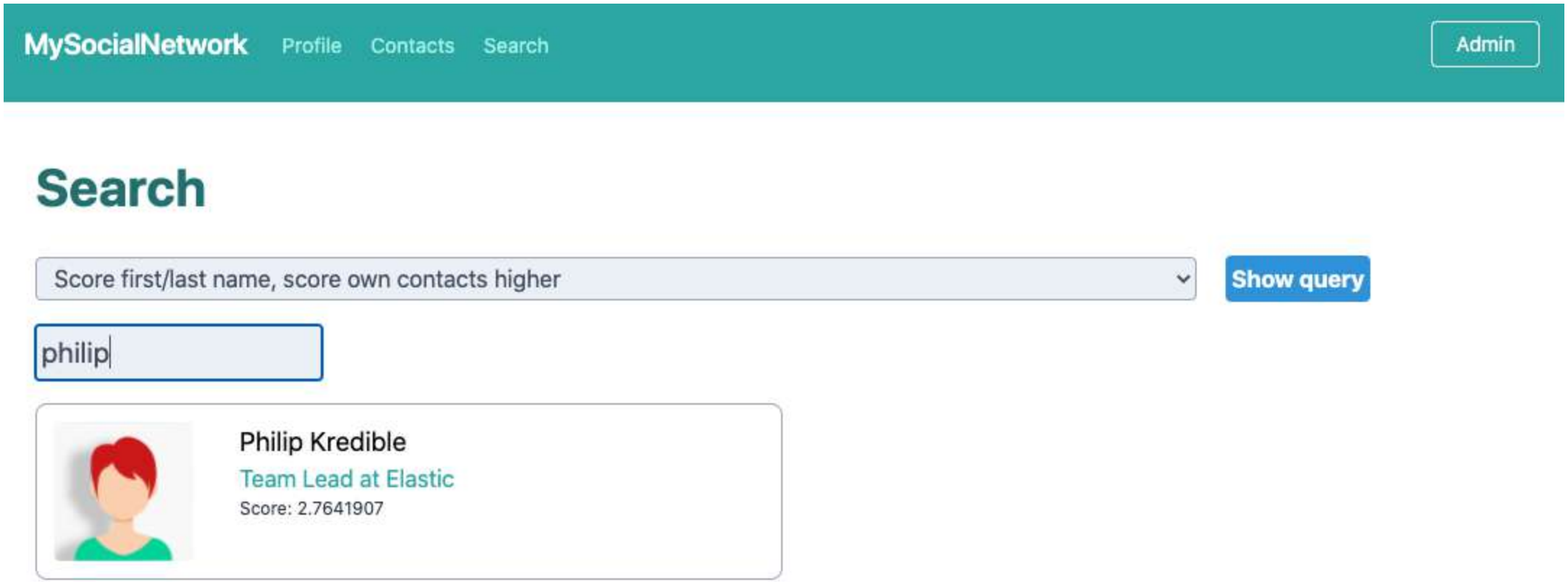
MySocialNetwork
Profile
Contacts
Search
Admin
Search
Score first/last name, score own contacts higher
Show query
philip
Philip Kredible
Team Lead at Elastic
Score: 2.7641907

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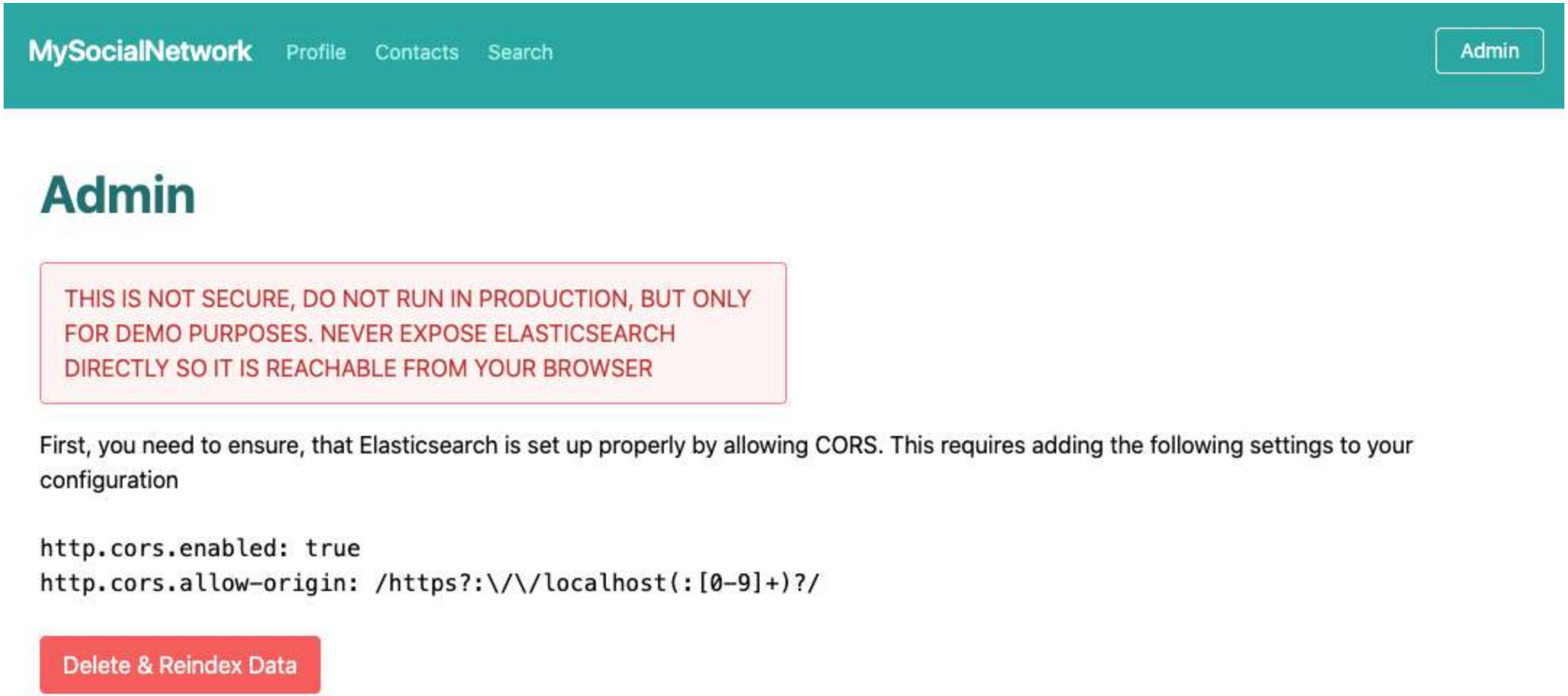
MySocialNetwork
Profile
Contacts
Search
Admin
Admin
THIS IS NOT SECURE, DO NOT RUN IN PRODUCTION, BUT ONLY FOR DEMO PURPOSES. NEVER EXPOSE ELASTICSEARCH DIRECTLY SO IT IS REACHABLE FROM YOUR BROWSER
First, you need to ensure, that Elasticsearch is set up properly by allowing CORS. This requires adding the following settings to your configuration
http.cors.enabled: true
http.cors.allow-origin: /https?:\/\/localhost(:[0-9]+)?/
Delete & Reindex Data

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Summary

- Coming up with a simple query is easy
- Figuring out user intents is hard
- Coming up with a proper query will take time and tries
- Analytics & metrics are vital

Next steps

- `rank_feature` : Boost score based on numeric field value
- `vector` : Similarity search based on a feature vector

? Can you quantify search experience ?

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? How to measure search improvements ?

? Continuous feedback loop ?

Thanks for listening

Q & A

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Community Advocate
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Resources

- GitHub Sample Repo
- rank_feature field type documentation
- vector field type documentation
- search_as_you_type field type documentation

Community & Meetups

https://community.elastic.co

Explore by region

Asia Pacific and Japan | Europe, Middle East and Africa | North and South America | Virtual

ELASTIC - BARCELONA Spain	**ELASTIC - COPENHAGEN** Denmark	**ELASTIC - GOTEBORG** Sweden	**ELASTIC - SCOTLAND** United Kingdom
ELASTIC - STOCKHOLM Sweden	**ELASTIC - TEL AVIV** Israel	**ELASTIC - TURKEY** Turkey	**ELASTIC BONN USER GROUP** Germany
ELASTIC CAMBRIDGE & EAST ANGLIA USER GROUP United Kingdom	**ELASTIC DUBAI USER GROUP** United Arab Emirates	**ELASTIC FR** France	**ELASTIC GREECE** Greece
ELASTIC HELSINKI Finland	**ELASTIC KRAKOW USER GROUP** Poland	**ELASTIC LONDON USER GROUP** United Kingdom	**ELASTIC LUXEMBOURG USER GROUP** Luxembourg
ELASTIC MANCHESTER USER GROUP United Kingdom	**ELASTIC MOSCOW** Russian Federation	**ELASTIC NIGERIA** Nigeria	**ELASTIC OSLO USER GROUP** Norway
ELASTIC PORTUGAL Portugal	**ELASTIC RHEINRUHR** Germany	**ELASTIC SLOVAK USER GROUP** Slovakia	**ELASTIC USER GROUP - CZ** Czech Republic
ELASTIC USER GROUP - DUBLIN Ireland	**ELASTIC USER GROUP ABIDJAN** Côte d'Ivoire	**ELASTIC WARSAW USER GROUP** Poland	**ELASTIC ZAGREB** Croatia
ELASTICSEARCH - SOUTH AFRICA South Africa	**ELASTICSEARCH SWITZERLAND** Switzerland	**ELASTICSEARCH USER GROUP PAKISTAN** Pakistan	**SEARCH MEETUP MUNICH** Germany

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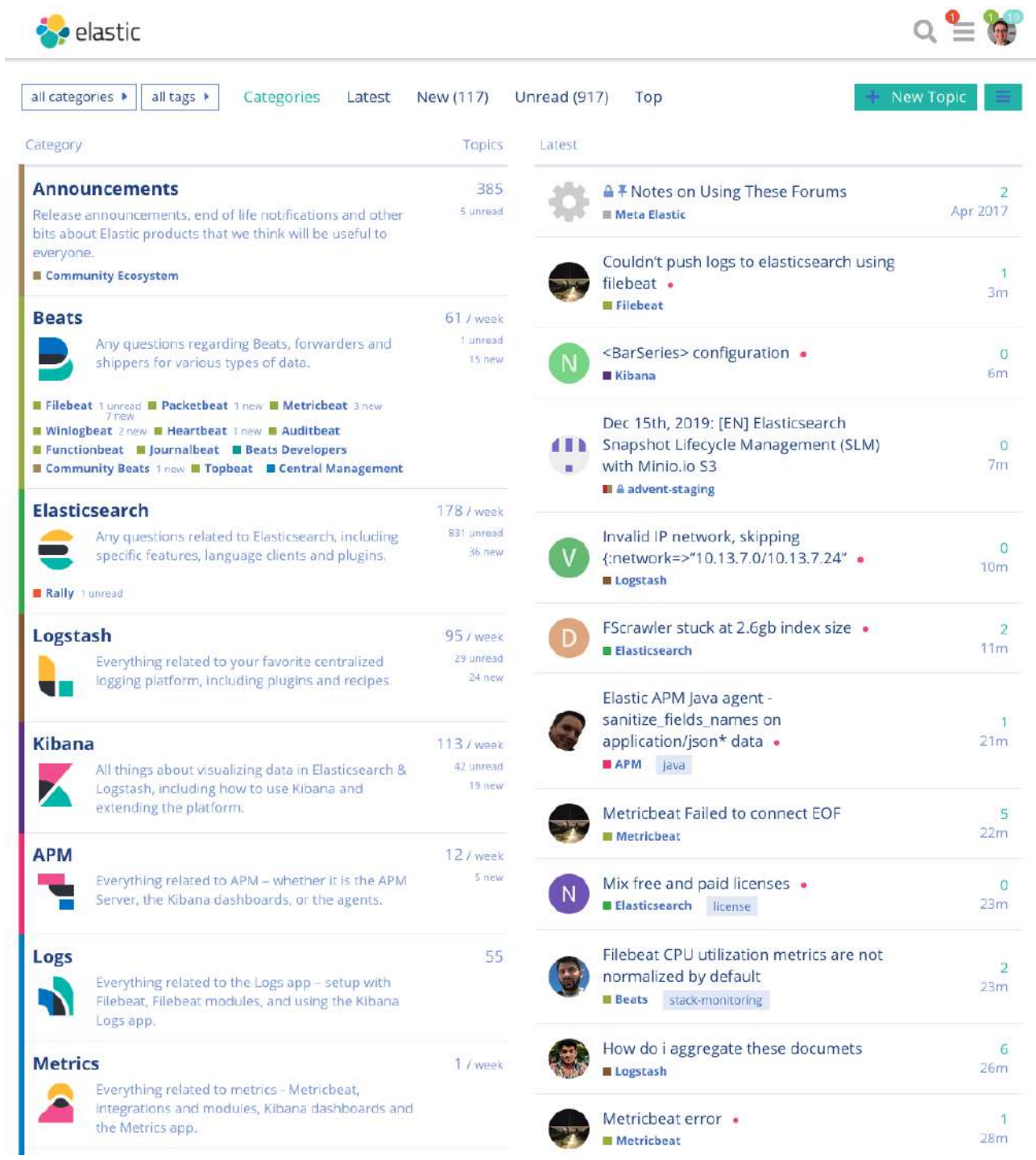
Discuss Forum

https://discuss.elastic.co



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