
OpenSearch - Ecommerce Search & Discovery Platform

— Powered by Querqy —

About us



Dr. Johannes Peter

Psychology and Computer Science | Querqy Committer | Team Servant | Data & Cloud Engineer
| Product Manager (if there is no alternative)

<https://www.linkedin.com/in/dr-johannes-peter-1b060975/>



Shenoy Pratik

SDE @ Relevancy Engineering OpenSearch.org | USC Alumni | Ex-Computer Vision at SAP

<https://www.linkedin.com/in/pshenoy36/>






Anirudha Jadhav


Open-Source @AWS | Engineering Leader @ OpenSearch.org , Solr, Lucene Elasticsearch

<https://www.linkedin.com/in/ianirudha/>


About OpenSearch(.org)

 **Nick Knize** 
@nknize

Words cannot express how grateful we [@OpenSearchProj](#) maintainers are for those that find time to contribute even when a war is going on in their home country. 🇺🇦 This is what [#OpenSource](#) is about. Thank you [@Hronom!](#) [#StandUpForUkraine](#)  [#WarInUkraine2022](#)

 [github.com](https://github.com/Hronom)
Hronom - Overview
Hronom has 96 repositories available. Follow their code on GitHub.


12:37 PM · Apr 6, 2022 · Twitter for Android

 **Daniel (dB.) Doubrovkine** @dblockdotorg · Apr 15


From concurrent searching to JDK17, Andriy Redko (reta@) from [@aiven_io](#) has contributed tons to OpenSearch core over past few months. He is now a co-maintainer - first, but certainly not last, non-AMZN w/maintainer rights on this repo since fork. Welcome!

opensearch-project/OpenSearch

#2905 Adding @reta to OpenSearch maintainers.




6 comments 9 reviews 1 file +14 -14

 **dblock** · April 14, 2022 · 2 commits

github.com
Adding @reta to OpenSearch maintainers. by dblock · Pull Request #2...
Signed-off-by: dblock dblock@amazon.com Description Following the process in opensearch-project/.github#59, I had nominated Andriy ...

SearchProj @OpenSearchProj · Apr 8
e Date! #OpenSearchCon 2022 spr.

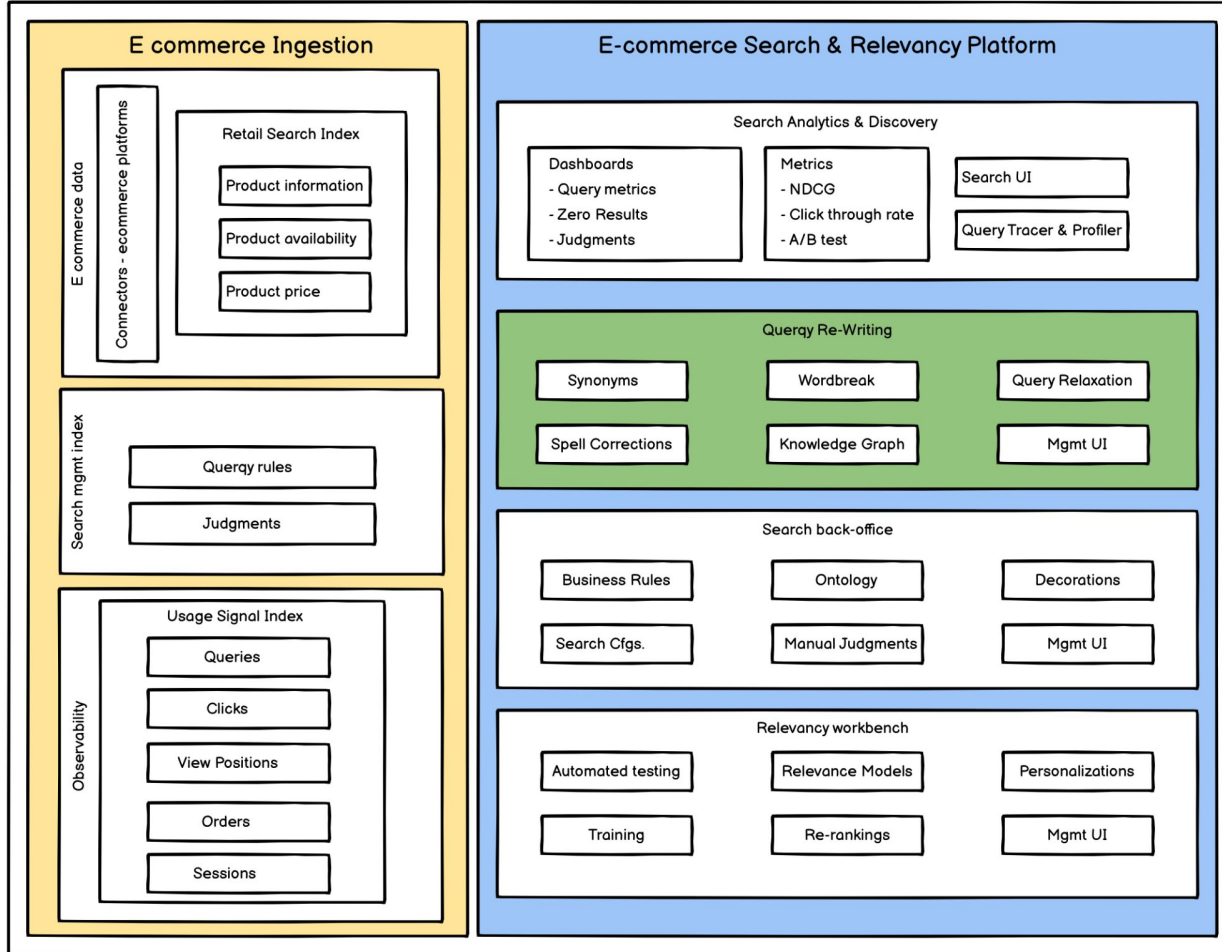
Save the date: Sept 21 2022



SEPTEMBER 2022

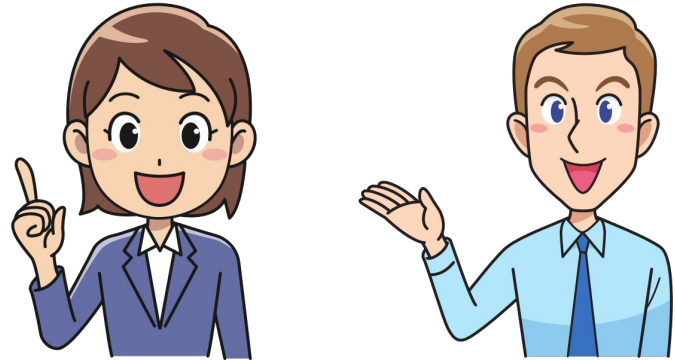
1 10 10

OpenSearch Relevancy Engineering : E-commerce



Search in the context of retail

“You want to implement a new search? This is a great idea. We will give you a long list of requirements. As soon as you have implemented all the features we will somehow compare the searches and decide whether we want to have it or not.”



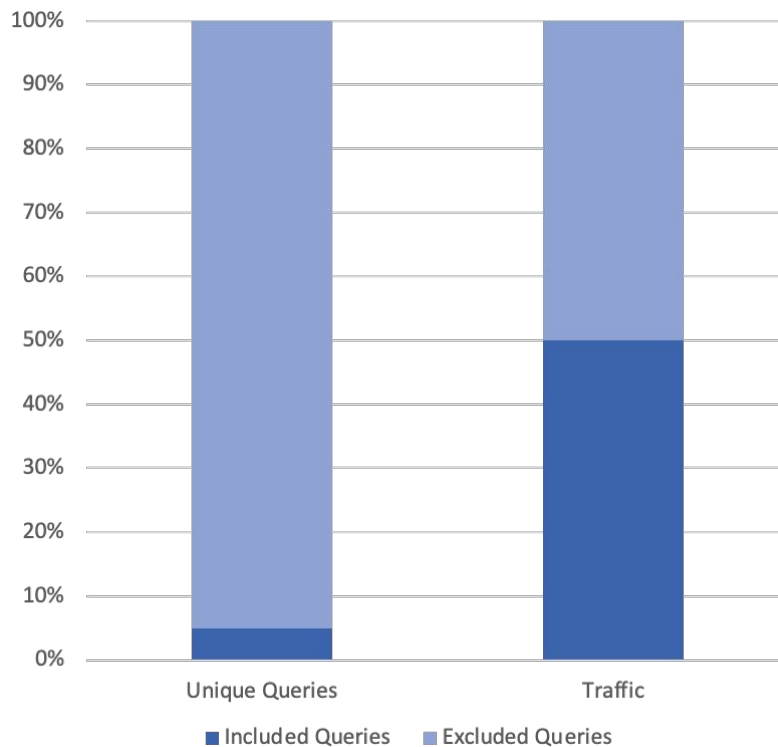
Sales responsibilities

- Teams sliced by categories (category managers)
 - Smartphones
 - Notebooks
 - ...
- Overall responsibility
 - Discounts
 - Promotions
 - Findability
 - ...

Much focus on short-head

Maintainable amount of queries

{



“I don't care about algorithms. I need the following products to be at the top for several queries at next Tuesday between 5 and 10 pm. Thank you.”



Retail is marketing-driven

- Singles' day (139 bn in China in 2021)
- Black Friday
- Valentines Day
- Thanksgiving
- Christmas
- ...



“Your machine learning learns the wrong things. Please tell it to push our private labels!”



What is relevance in retail about?

- Customer satisfaction / inspiration / experience
- Margin
- Promotions
- Private labels
- Manufacturer deals
- Storage cost
- Return cost
- Sponsored products

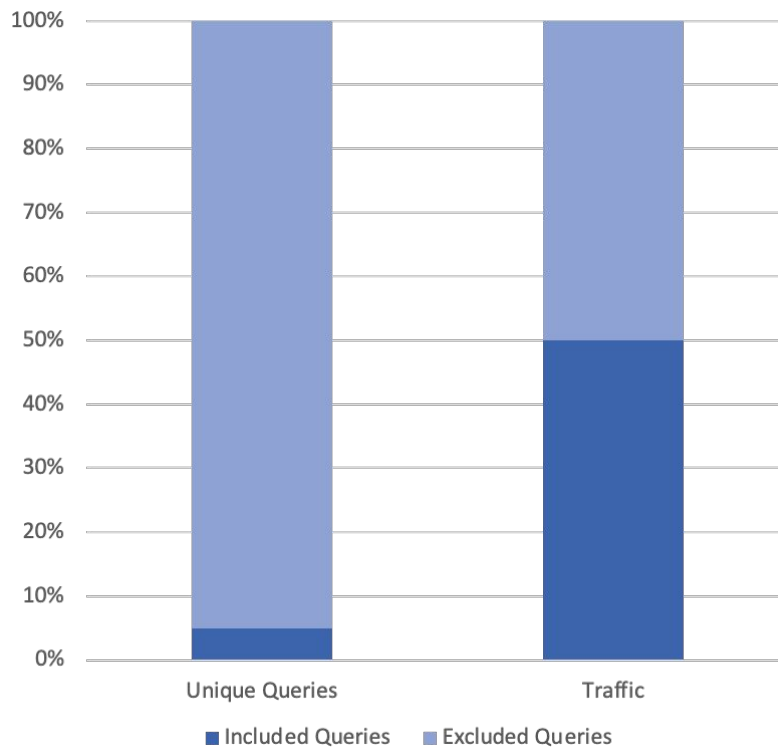
“Well, you finally did it and released a new search this is awesome ... uhm ... we are all really excited about this and ... uhm ... what about AI?”



Why developing an own search?

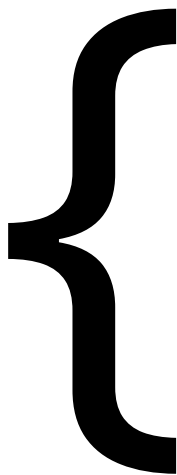
This is the must-have

{

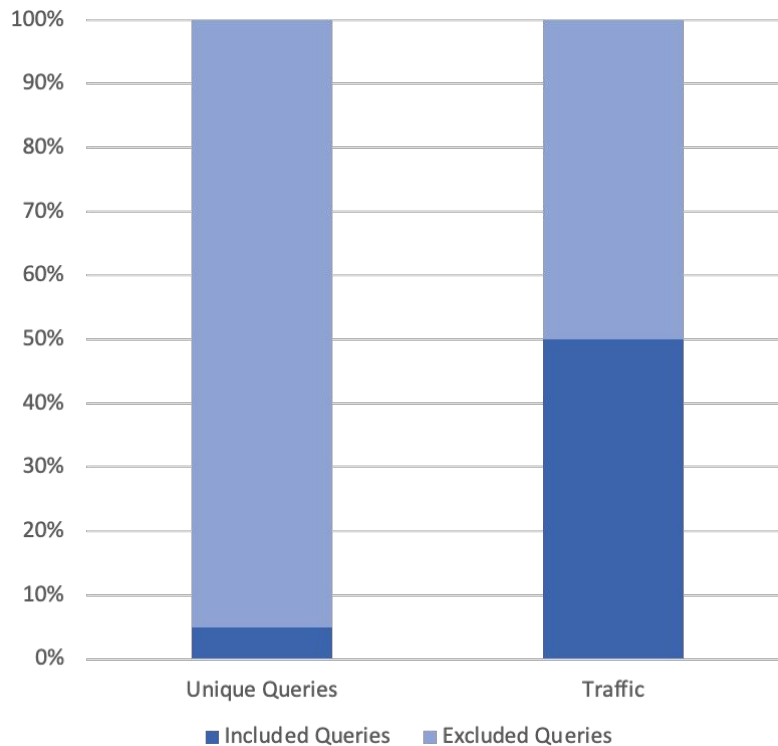


Why developing an own search?

This is the potential



This is the must-have



Get your short-head done!

- Continuous improvement & maintenance
- Enablement of Category Managers

- Query rewriting
 - Wordbreak
 - Spell Correction
 - Synonyms / Graphs
 - Boosts
 - Semantic filters
 - ...



Own your e-commerce search with Chorus (Wrigley, 2022)

- Querqy (library/plugin for search business rules)
- SMUI (UI for rule maintenance)
- Splainer (tracing / debugging of result scores)
- Quepid (manual judgments)
- Blacklight / ReactiveSearch (search UI)

What is Querqy?

Querqy is a library and an open source query rewriting plugin for Solr, Elasticsearch and (soon) OpenSearch



... and others ...

Querqy for OpenSearch

- Source code: <https://github.com/JohannesDaniel/querqy-opensearch>
- Roadmap: <https://github.com/orgs/opensearch-project/projects/1>

The screenshot shows the GitHub project page for the OpenSearch Project Roadmap. The page is titled "opensearch-project" and has navigation tabs for Overview, Repositories, Projects, Packages, Teams, People, and Insights. The "Projects" tab is active, showing a roadmap for the OpenSearch Project, updated 3 hours ago. The roadmap is divided into version milestones: 2.1.0 (June 30th), 2.2.0 (August 11th), 2.3.0 (September 29th), and 3.0.0 (Preview: September 19th, 2023). The 2.2.0 milestone is highlighted with a brown border. It contains a [META] - Query: query rewriting plugin for search relevance, linked to opensearch-project/sql#591, added by ps48. Below this is a [FEATURE] [META] Querqy Plugin Release, linked to #591, also added by ps48, with an enhancement label. The 2.3.0 milestone includes Alerting: Support alerts on audit logs via alerting dashboard, linked to opensearch-project/alerting#108, added by xinlamzn, with a support label. The 3.0.0 milestone includes [Maps] Support Map in OpenSearch, linked to opensearch-project/maps, added by an unnamed user, with a support label. The bottom of the page shows a [FEATURE] [META] Querqy Plugin Release, linked to #108, added by praveensamneni in opensearch-project/alerting, with an enhancement label. The bottom of the page also shows a [META] - Generating Alerts Based on Visualizations, linked to opensearch-project/alerting, added by an unnamed user, with a support label.

Analytics with OpenSearch

OpenSearch SQL

- OpenSearch SQL lets you write queries in SQL rather than the OpenSearch query DSL
- SQL supports
 - Aggregations
 - Full-text Search
 - Functions
 - JDBC
 - ODBC

Query Workbench

SQL PPL [SQL documentation](#)

Query editor

```
1 SELECT * FROM accounts;
2 WHERE _id = 1
```

Run Clear Explain

Results [Full screen view](#)

Output accounts

accounts (4) [Download](#)

Search keyword

account_number	firstname	address	balance	gender	city	employer	state	age	email
1	Amber	880 Holmes Lane	39225	M	Brogan	Pyrami	IL	32	amberduke@com
6	Hattie	671 Bristol Street	5686	M	Dante	Netagy	TN	36	hattiebond@com
13	Nanette	789 Madison Street	32838	F	Nogal	Quilty	VA	28	nanettebate.com
18	Dale	467 Hutchinson Court	4180	M	Orick	-	MD	33	daleadams@om

Rows per page: 10

OpenSearch SQL for E-commerce

Sample session dataset:

- We created sample session data that captures queries, product clicks and checkout information
- The products are subset of category `printers` from Chorus Dataset
- Attributes stored: `session_id`, `query`, `product_click`, `checkout details`

OpenSearch SQL for E-commerce

```
photo_printer =>  
  UP(20): 1231616  
  UP(18): 469890  
  UP(16): 1724761
```

```
printer =>  
  UP(11): 3161192  
  UP(8): 902138
```

```
POST _plugins/_sql?format=json|csv|raw  
{  
  "query": "SELECT * FROM my-index LIMIT 50"  
}
```

- Using the output of OpenSearch SQL, we can update the querqy rules
- Go a step further, to automate the querqy rules with SQL REST APIs

OpenSearch PPL

- Piped Processing Language (PPL) is a query language that lets you use pipe (|) syntax to explore, discover, and query data stored in OpenSearch, especially for observability.

```
search source=accounts
| where age > 18
| fields firstname, lastname
```

SAMPLE RESPONSE

firstname	lastname
Amber	Duke
Hattie	Bond
Nanette	Bates
Dale	Adams

Observability into E-commerce Session Data

- Use OpenSearch PPL to create graphs, charts and panels.
- Create visualization and saved queries from clickstream logs, session information, service logs in Events Analytics.
- Create operational panels to aggregate all the visualizations in a single pane.

Join us

100% open source work!

<https://www.linkedin.com/in/ianirudha> - lets talk!

- Greater Seattle Areas
- Vancouver CA
- Berlin, Germany
- Bangalore, India
- Shanghai
- Fully remote!

OpenSearch Relevancy Engineering : E-commerce

Future plans
&
Thank You!

