Tech Overview

Q·Sensei

ADVANCING ANALYTICS

Ute Rother, CEO and Co-founder

September 2021

"Data is eating the World"

Challenge

Massive amounts of structured and unstructured data drive costs for data aggregation, cleansing, tagging, storage, and querying.

Q·Sensei

Q-Sensei Logs

Modern Analytics for Everyone
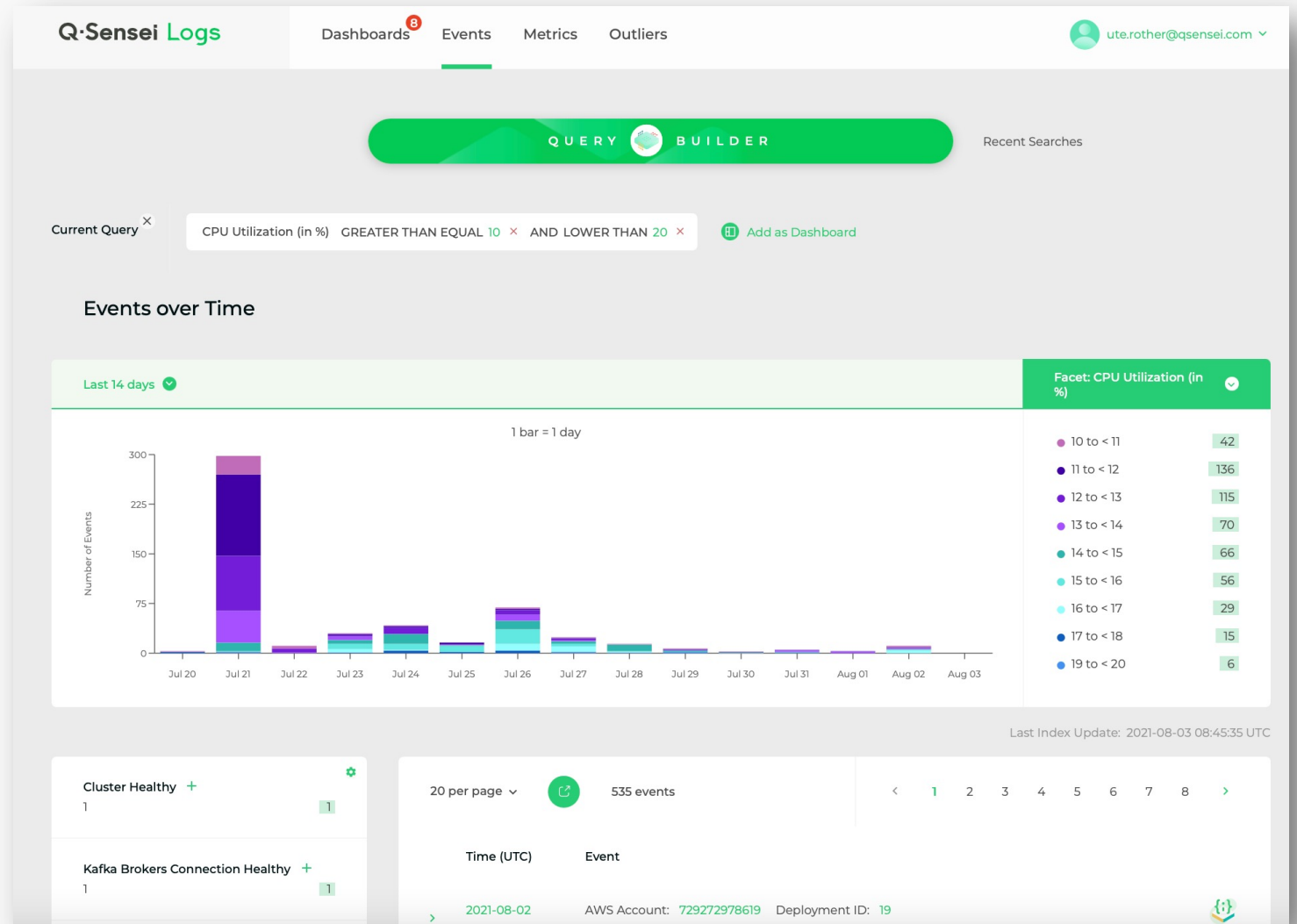
Intuitive User Interface

For next-gen analytics featuring

Query Builder, Dashboards,

Advanced Log Aggregation and more

True Human-Data-Interaction

Accelerated processing of thousands of

indexes and billions of data points

Q·Sensei

Accelerating Analytics

Q-Sensei Fuse

Modular data platform

For data aggregation, cleansing, and tagging

In-memory Index

For high-speed querying of data using low-cost commodity hardware

Comprehensive API Layer

For custom applications and AI/ML

API Reference > Queries > Combining Search Clauses

FUSE GUIDE

Tutorials
Installing Fuse
Configuration
Schema
Adding Data
Querying Fuse

API REFERENCE

∨ Queries
  Building a Query
  Build Single Facet Queries
  Combining Search Clauses
Facets
  Query All Facets
  Query a Single Facet
  Time Series
Contents
  Query all Content
  Query Content by ID
Search

GET

`/queries?q={string:q}&part={string:part1}&part={string:part2}`

Query Parameters

q	required	optional	First query.	
part	required	optional	Additional query to add.	>
op	string	optional	Query combining strategy.	>
sort	boolean	optional	Sort query parts.	>

Response JSON Object

expression	object	optional	Current query expression.	
negate	object	optional	`GET /queries` with the negative of	
parsed	object	optional	Parsed tree of the current query.	>

DEMO

Hyper-precise Querying

https://www.qsensei.com/q-sensei-logs-demo
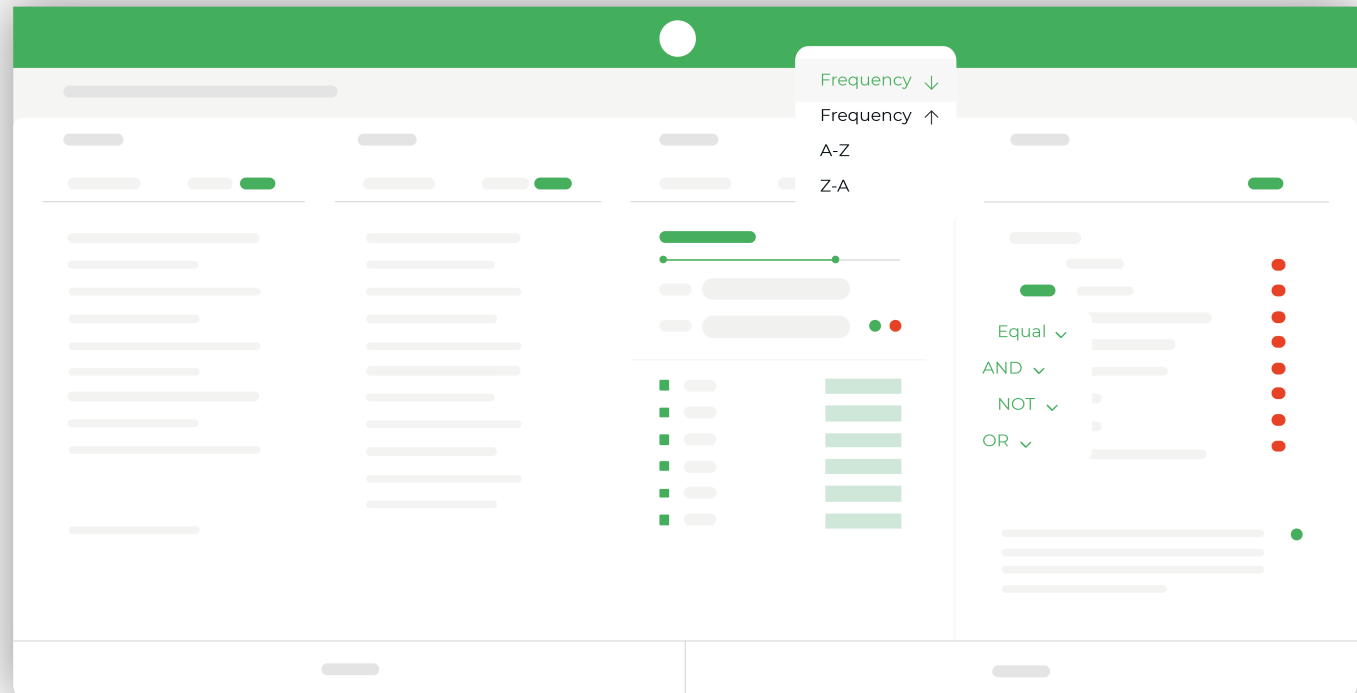
Q·Sensei

Breakthrough in Interactive Analytics

10,000+
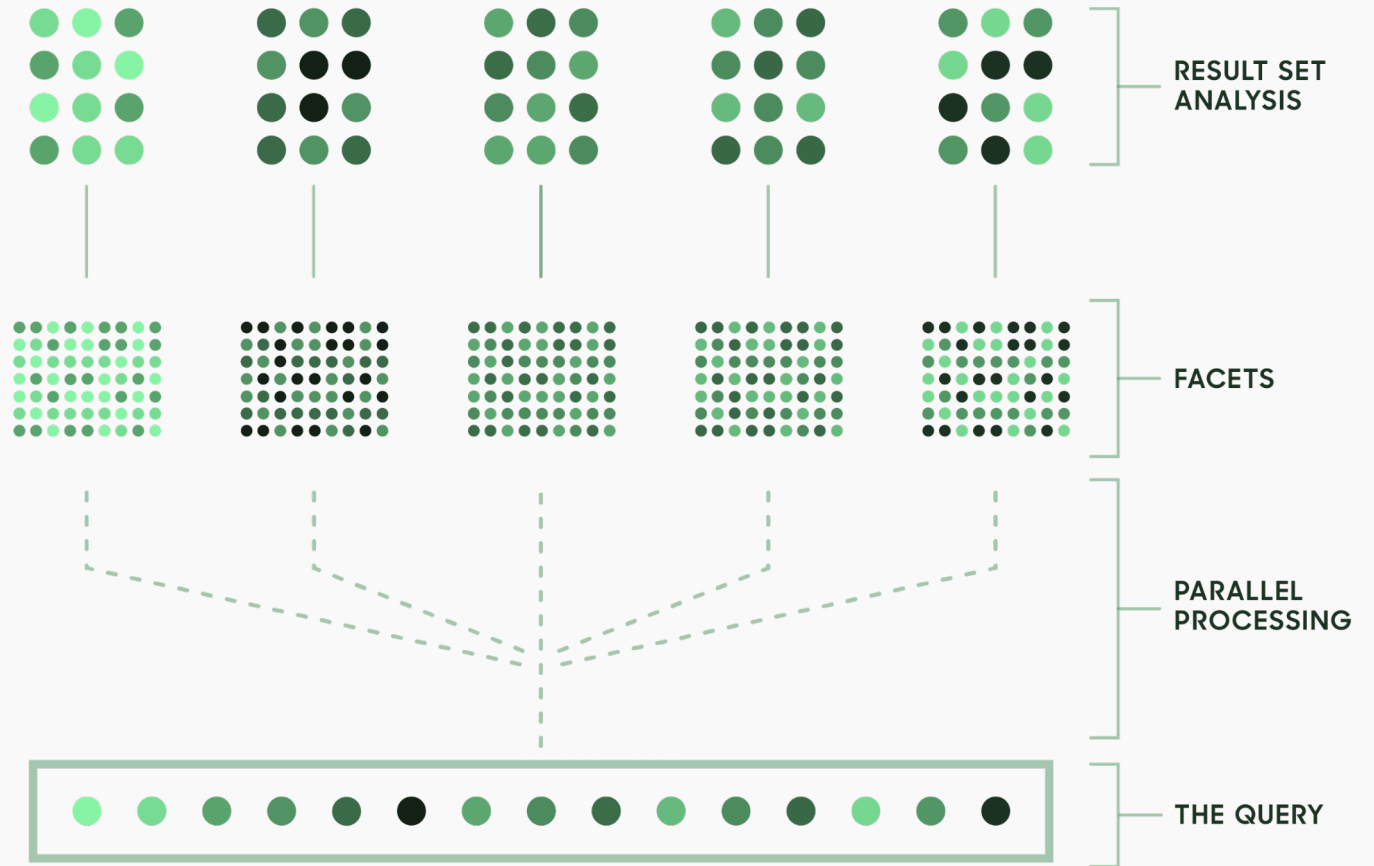
Indexes for
Human Data Interaction,
ML, and AI

1,000x

Boost in
Algorithmic Querying

450%

Higher
Relevancy of Results

RESULT SET ANALYSIS

FACETS

PARALLEL PROCESSING

THE QUERY

Q·Sensei

Next-Gen Speed Using Low-Cost Commodity Hardware

Q-Sensei has the best price-performance ratio in the market:
On a billion-row taxi data set, **Q-Sensei's PPR is up to 37,000 times better**.

Setup	Query 1	Query 2	Query 3	Query 4	Query Compute Costs
Q-Sensei Fuse 6.5.1 1 x c5.12xlarge	0.001	0.130	0.123	0.576	$2.04
Q-Sensei Fuse 6.5.1 1 x c5.9xlarge	0.001	0.176	0.166	0.587	$1.53
BrytlytDB 2.0 & 2-node p2.16xlarge cluster	0.009	0.027	0.287	0.428	$28.80
OmniSci & 2-node p2.8xlarge cluster	0.034	0.061	0.178	0.498	$14.40
ClickHouse, 3 x c5d.9xlarge cluster	0.241	0.826	1.209	1.781	$5.18
Redshift, 6-node ds2.8xlarge cluster*	1.560	1.250	2.250	2.970	$40.80
Spark 2.4 & 21 x m3.xlarge HDFS cluster*	2.362	3.559	4.019	20.412	$5.59
Presto 0.214 & 21 x m3.xlarge HDFS cluster*	3.540	6.290	7.660	11.920	$5.59
Elasticsearch (heavily tuned)*	8.100	18.180	N/A	N/A	$0.50
Vertica, Intel Core i5 4670K	14.389	32.148	33.448	67.312	$0.50
Elasticsearch (lightly tuned)*	34.480	63.300	N/A	N/A	$0.50
PostgreSQL 9.5 & cstore_fdw*	152.000	175.000	235.000	368.000	$0.50

	Q-Sensei: Comparative Analysis				
		Price-Performance Ratio			
Vendor	**Setup**	Query 1	Query 2	Query 3	Query 4
Q-Sensei	Q-Sensei Fuse 6.5.1 1 x c5.12xlarge	1x	1x	1x	1x
Q-Sensei	Q-Sensei Fuse 6.5.1 1 x c5.9xlarge	0.75x	1.02x	1.01x	0.76x
Brytlyt	BrytlytDB 2.0 & 2-node p2.16xlarge cluster	127x	3x	33x	10x
OmniSci	OmniSci & 2-node p2.8xlarge cluster	240x	3x	10x	6x
Open Source	ClickHouse, 3 x c5d.9xlarge cluster	612x	16x	25x	8x
Elastic	Elasticsearch (heavily tuned)*	1,985x	34x	N/A	N/A
Vertica	Vertica, Intel Core i5 4670K	3,527x	61x	67x	29x
Apache	Spark 2.4 & 21 x m3.xlarge HDFS cluster*	6,472x	75x	90x	97x
Elastic	Elasticsearch (lightly tuned)*	8,451x	119x	N/A	N/A
Open Source	Presto 0.214 & 21 x m3.xlarge HDFS cluster*	9,700x	133x	171x	57x
Amazon	Redshift, 6-node ds2.8xlarge cluster*	31,200x	192x	366x	103x
Open Source	PostgreSQL 9.5 & cstore_fdw*	37,255x	330x	468x	157x

Sources: https://tech.marksblogg.com/benchmarks.html
Q-Sensei performance test 08/2021
Queries are shown in appendix
Query speed is measured in seconds
*Most often used

Confidential Information

Q·Sensei

Queries Used in Benchmark Analysis

Query 1   SELECT cab_type, count(*) FROM trips GROUP BY cab_type;

Query 2   SELECT passenger_count, avg(total_amount) FROM trips GROUP BY passenger_count;

Query 3   SELECT passenger_count, extract(year from pickup_datetime) AS pickup_year, count(*) FROM trips
            GROUP BY passenger_count, pickup_year;

Query 4   SELECT passenger_count, extract(year from pickup_datetime) AS pickup_year, cast(trip_distance as int)
            AS distance, count(*) AS the_count FROM trips GROUP BY passenger_count, pickup_year, distance
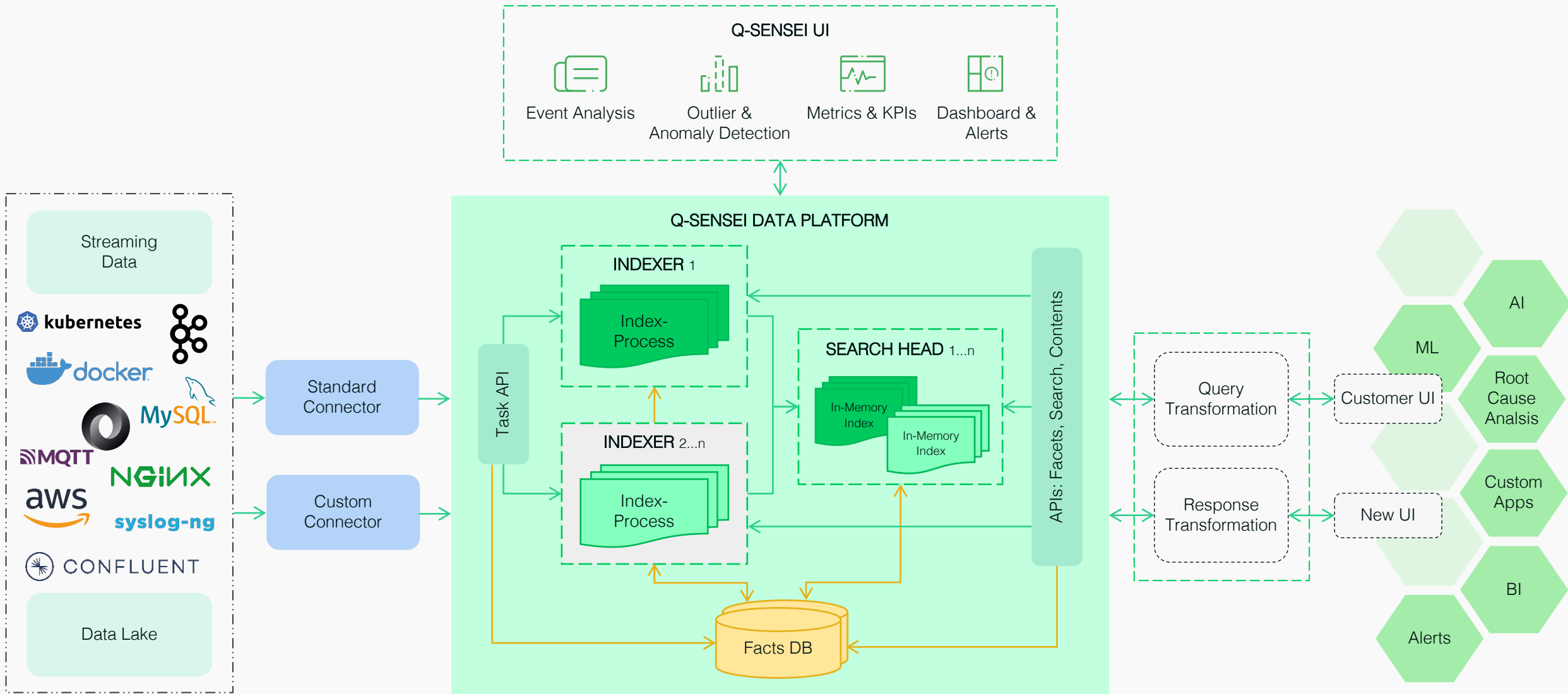   ORDER BY pickup_year, the_count desc;

Comprehensive Set of Analytical Features

Q-Sensei Index

1.0

High-performance, scalar, In-Memory Index Kernel

Real-time analysis of faceted data

Queries in full-text and facets with Boolean Operators

Sorting and multi-sorting of search results

Range search (numerical and text)

2.0

Distributed indexing

Autocomplete within and across facets

Time Series analysis

3.0

Vectorized Index Kernel

Phrase-autocomplete in full-text

Advanced Query Builder

Analytical Dashboards

4.0

Index versioning

Statistical Functions

Mathematical Functions

Logical Functions

5.0

Real-time distributed indexing

Algorithmic querying

6.0

Index process optimization

Support of thousands of indexes

Outlier detection

Anomaly analysis

Protected by US Patents 7,080,059 – 7,680,777 – 9,690,824
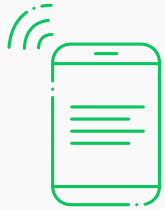
Modular Platform

Use Cases

Product Development
Test Data Monitoring
KPI Comparison across Releases
Product Validation

Healthcare
Clinical Trial Analysis
ICU Monitoring
Patient Data Analysis

Telecommunications
Network Monitoring
Threat Analysis and Prevention
Bandwidth Optimization

Media
Audience Measurement
Ad Optimization
Predictive Programming

Financial Services
Real-time Cost Monitoring
Sales Analysis
Controlling and Auditing

Transportation
Real-time fleet monitoring
Optimized insurance packages
Smart cities

Q·Sensei

Company Snapshot

Management

Ute Rother
CEO, Founder

Wolfram Kerber
CTO, Founder

Richard Nottenburg
Chairman

Products

Q-Sensei Finance
Available in AWS Marketplace

Q-Sensei Logs
Available in AWS Marketplace

Q-Sensei Enterprise
Available in AWS Marketplace
and on-prem

Business

Founded 2007

US Patents

Search and Presentation Engine
7,080,059 – 7,680,777 – 9,690,824

Locations

USA, Germany

Industry Awards

Q·Sensei