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Accurate Fuzzy Name Search for OpenSearch with Babel Street Match

BABEL STREET ANALYTICS

Users of Amazon OpenSearch Service understand its power for keyword searches that return relevant results. But they are likely frustrated when using the same functionality for matching names. Why? Because names are so variable that standard fuzzy queries in OpenSearch — which only address a small fraction of the issues (typos and phonetic similarity) — quickly become complex and unwieldy.

Fortunately, Amazon OpenSearch Service users can now access Babel Street Match, the industry–leading fuzzy name matching tool for people, organizations, addresses, and dates — and they can provision it via a simple option within Amazon Web Services (AWS).

Match is the technology trusted by U.S. Customs and Border Protection and financial institutions for watchlist screening. It matches names across languages and scripts and 15+ variations, reducing false positives and false negatives.

The power of Match comes from AI with a deep and nuanced understanding of names across more than 20 languages and cultures. A patented two–pass approach improves name matching accuracy without compromising speed, even for databases with tens of millions of names.

To enhance accuracy across diverse datasets, Match provides a user–friendly, no–code interface — Match Studio — to fine–tune match behavior to address issues specific to your data.

Representative name variations that Match addresses

Phonetic similarity
Kailey ↔ Caylee ↔ Kaylie

Transliteration spelling differences
Abdul Rasheed ↔ Abd al–Rashid

Nicknames
William ↔ Will ↔ Bill ↔ Billy

Missing spaces or hyphens
MaryEllen ↔ Mary Ellen ↔ Mary–Ellen

Titles and honorifics
Dr. ↔ Mr. ↔ Ph.D.

Truncated name components
Blankenship ↔ Blankensh

Gender
Jon Smith ↔ John Smith (but not Joan Smith)

Missing name components
Phillip Charles Carr ↔ Phillip Carr

Out-of-order name components
Diaz, Carlos Alfonzo ↔ Carlos Alfonzo Diaz

Initials
J. E. Smith ↔ James Earl Smith

Name split inconsistently across database fields
Rip · Van Winkle ↔ Rip Van · Winkle

Same name in multiple languages
Mao Zedong ↔ Мао Цзэдун ↔ 毛泽东 ↔ 毛澤東

Semantically similar names
PennyLuck Pharmaceuticals, Inc. ↔ PennyLuck Drugs, Co.

Semantically similar names across languages
San'in Telegraph and Telephone Corporation ↔ 山陰電信電話株式会社

Organizational aliases
Boston Brewing Company ↔ BeantownBeer

Benefits for the end user

If your system already uses OpenSearch and you need to fuzzy search names, simply acquire a license for Babel Street Match and turn it on in your Amazon OpenSearch Service instance.

The only difference your users will notice is better name search:

- Higher precision and recall
- Significantly fewer false positives and false negatives
- More than a dozen name variations considered simultaneously in every name search
- Cross-lingual name search in 20+ languages
- Intuitively ranked results and similarity scores that let the user set the cut-off score for what is considered "a match"
- Explanation of the factors that penalized or boosted the match confidence score

Benefits for system administrators

Amazon OpenSearch Service takes care of activating Match in managed instances. Self-managed instance users simply install the integration package through the plug-in mechanism.

Subject matter experts can access a wide range of parameters and configurations through the no-code, user-friendly administrative interface, Match Studio. It displays the effect of parameter changes on match behavior in real time to optimize Match's accuracy for each group of users or even individual users on a per query basis. Selected parameter sets are easily transferred to Amazon OpenSearch Service.

These parameters can specify:

- Greater/lesser penalties for different types of name phenomena (for example: out-of-order name or initials)
- Custom scores for specific nicknames, equivalent terms (auto vs. car), and aliases (New York City vs. Big Apple)
- Speed versus search recall trade-offs depending on need

The Match integration for OpenSearch handles the complexity of fuzzy name search across multiple dimensions behind the scenes— delivering accurate name search through Amazon OpenSearch Service. License and deploy Babel Street Match with a simple option from the managed service console.

Contact Babel Street to activate an evaluation license of the
Babel Street Match integration for Amazon OpenSearch Service.

Babel Street is the trusted technology partner for the world's most advanced identity intelligence and risk operations. The Babel Street Insights platform delivers advanced AI and data analytics solutions to close the Risk-Confidence Gap.

Babel Street provides unmatched, analysis-ready data regardless of language, proactive risk identification, 360-degree insights, high-speed automation, and seamless integration into existing systems. We empower government and commercial organizations to transform high-stakes identity and risk operations into a strategic advantage.

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