

Building AWS Machine Learning Powered Online Platform to Improve Recruiting and Hiring



Executive Summary

SeligoHR is a premier employment site that connects the best job candidates with the best jobs, employers, and career advice. The site uses machine learning–based skills assessments to help employers analyze qualified candidates for open jobs, based on experience, education, and professional achievements. Candidates can also use SeligoHR skills assessment to find all the position types for which they’re the best fit.

Beyond simply hiring employees, SeligoHR helps companies create contemporary, well-crafted teams that deliver greater value.

“With help from ClearScale, SeligoHR’s industry-leading use of Machine Learning represents best-in-class service for the contemporary workforce and for innovative work environments. SeligoHR delivers.”

Greg Jordan, Founder, SeligoHR

The Challenge

Today’s companies need to operate with fewer, but more highly skilled, employees. This work environment requires individual responsibility, independence, collaboration, initiative, and a global perspective. Creating a modern workforce is fast becoming a more creative and essential function, as it’s even more important to identify knowledge bases, work experience, and technical, mathematical, and scientific skill sets.

Unfortunately, companies have had to fill their critical open positions by relying on manual searches for job candidates, which can cost large amounts of time and money. Although there are numerous job search sites online, many lack advanced features, including map-based search, seniority-level search, interactivity, and more criteria to choose from. They also tend to be visually unattractive and cumbersome to use.

SeligoHR is out to change all that. The company's goal is to create an application that can search the digital globe to find candidates using machine learning (ML) technology to determine how well these candidates match a company's criteria, work environment, and teams. ML technology sees more than HR people can, and it provides more accurate matching with more objective searches.

To build this unique HR platform, SeligoHR reached out to [ClearScale, an AWS Premier Consulting Partner](#).

The ClearScale Solution

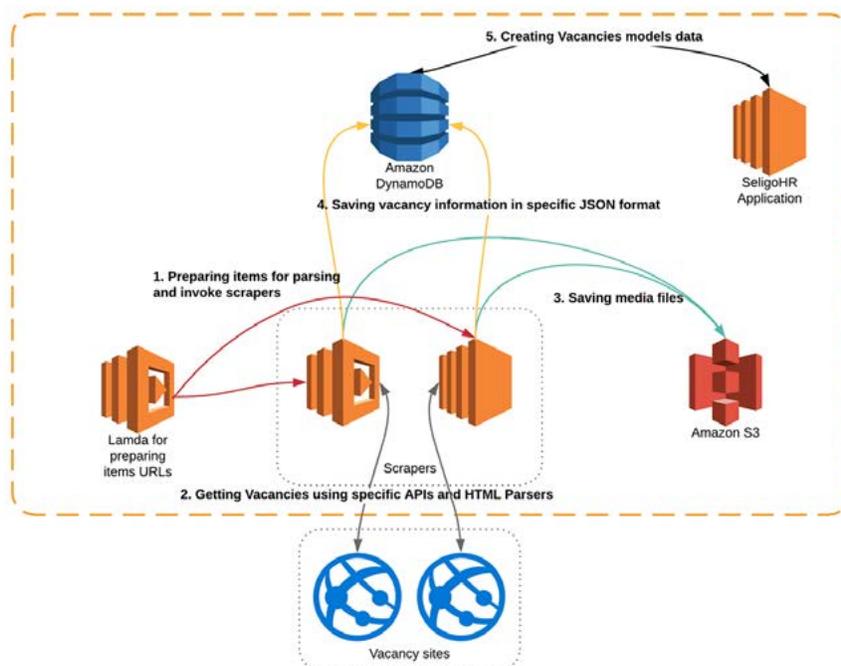
ClearScale began building a robust platform using [Amazon Web Services \(AWS\) Machine Learning](#). This cloud-based service provides visualization tools and wizards that make it easy for developers to create ML models.

AWS ML allows users to create search criteria, or to use a recommended matching-criteria set based on their business and industry, to locate the very best candidates. Its logistic regression algorithm is the key feature that drives this matching process.

How does it work? Each candidate's experience record is processed with other profile information to create a compatibility index against the specific job requirements. This identifies essential characteristics related to the candidate's success based on resume data, which may not be immediately obvious when HR staff use manual candidate review processes.

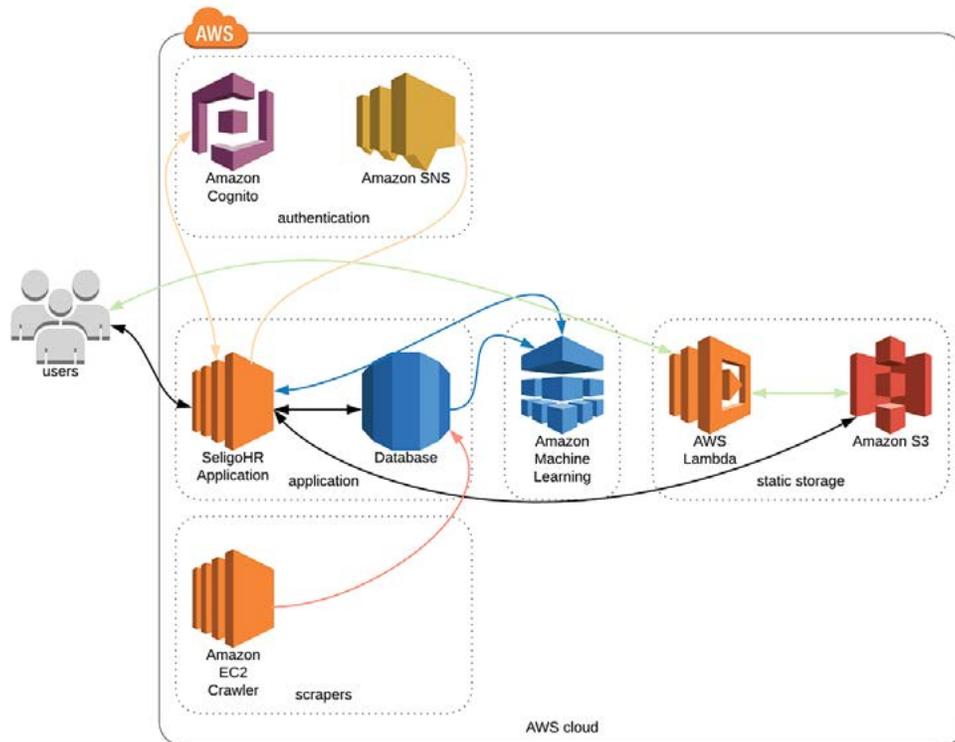
AWS also provides advanced APIs enabling HR departments to build better-matched teams that can become value-creating engines for employers worldwide.

Search Architecture



ML also powers the site's guided search process. Each time a candidate or an employer posts a resume, CV, or job description, the site immediately starts delivering jobs or resumes that are the best match for the posted data.

Application Architecture

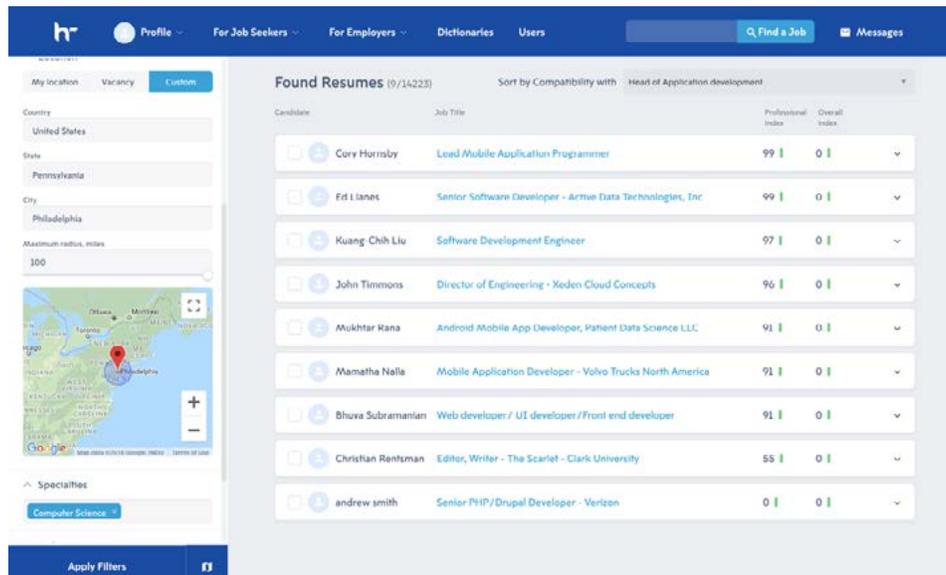


In this application, AWS Software Development Kits (SDKs) are used to interact with AWS Machine Learning, Amazon S3 object storage, and the Amazon Aurora MySQL relational database. These SDKs also support the PostgreSQL open-source database and the Amazon Elastic Compute Cloud (EC2), a cloud-based web service that provides easy, secure compute capability.

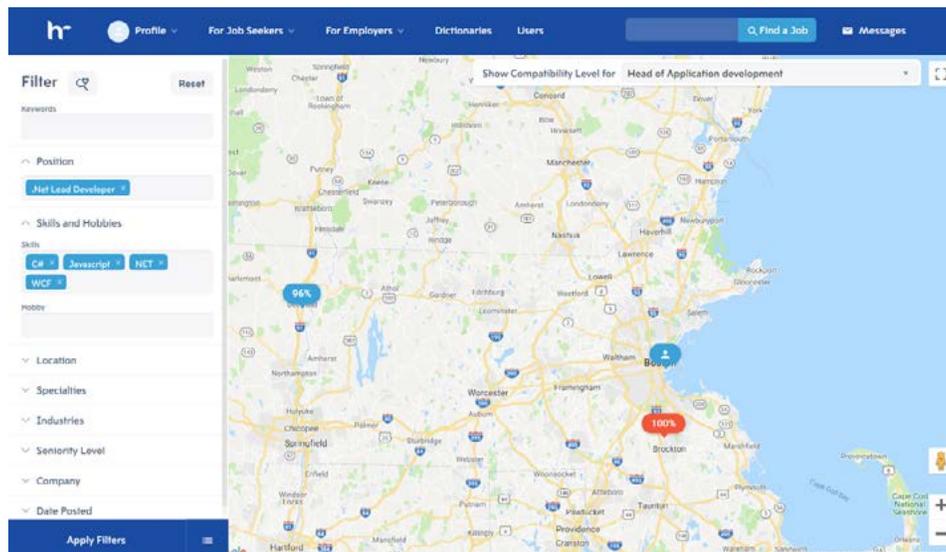
[Amazon Simple Queue Service \(SQS\)](#) interacts between the cluster and the application, while [Amazon Cognito](#) access control provides user authentication with the highest security and scalability.

The Application Interface Screenshots

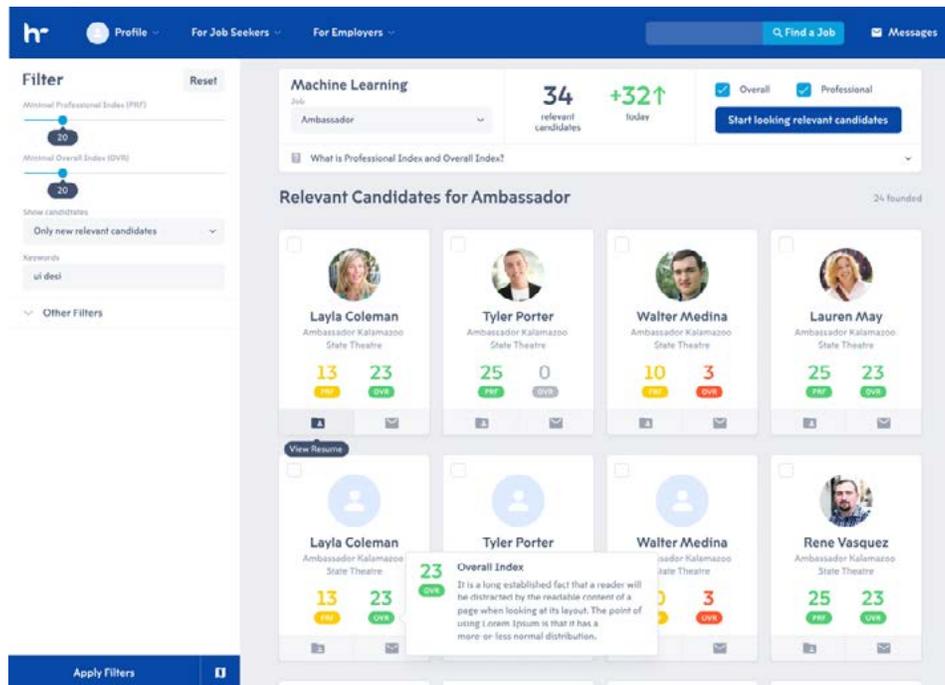
Profile View



Geolocation With Filters



Candidates Suggestion Tool



The Benefits

Driven by AWS Machine Learning, the new SeligoHR website is a clear cut above competing job search sites, offering better results for the employer and job seeker. It reduces the time and cost of searches, and provides greater convenience and simplicity, with more effective alignment of candidate skills with job requirements. And AWS delivers the scalability, high availability, and reliability that are so critical for this high-traffic site.

Job seekers can take advantage of the site's innovative search tools and advanced features, using its visually appealing, interactive interface to pinpoint the best jobs for their unique strengths and knowledge base. Employers can enjoy the benefits of enhanced staff compatibility, reduced turnover, and improved employee longevity and performance. The new site improves organizational alignment, performance, and profitability, as well as allows management to focus on strategy and implementation with confidence.