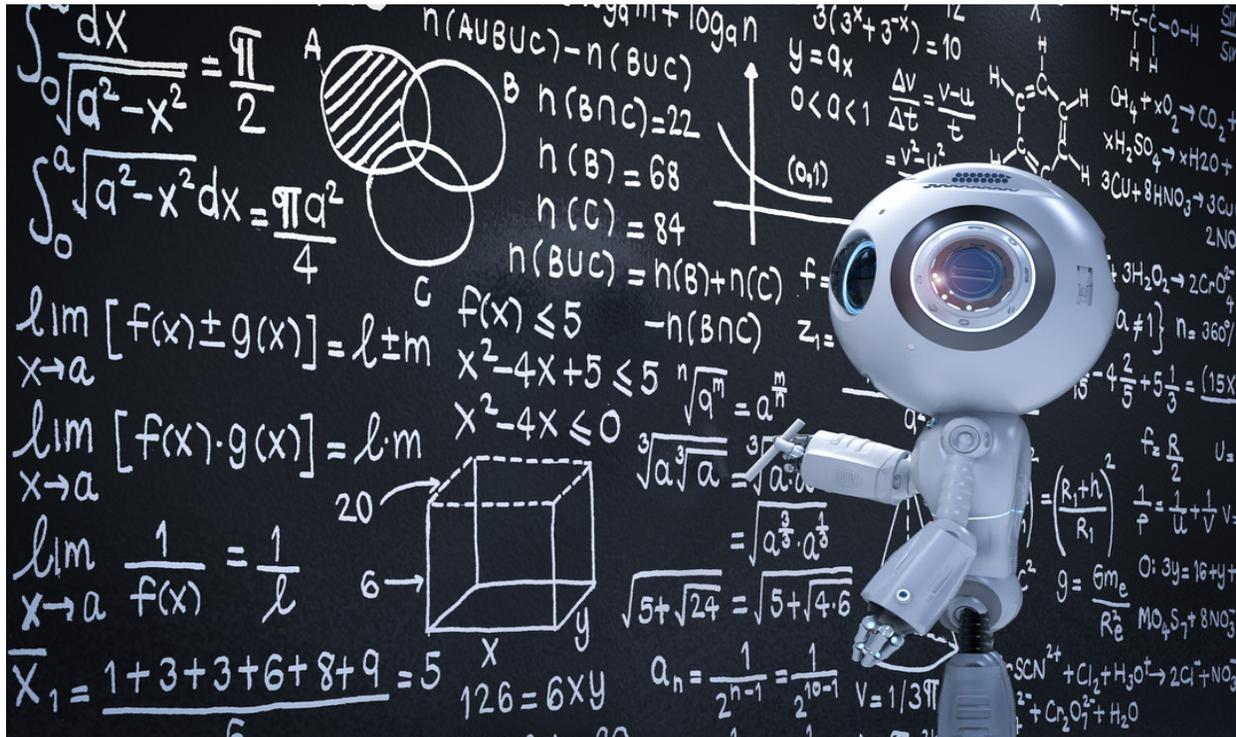


How AI Delivers Better Results for Jobs

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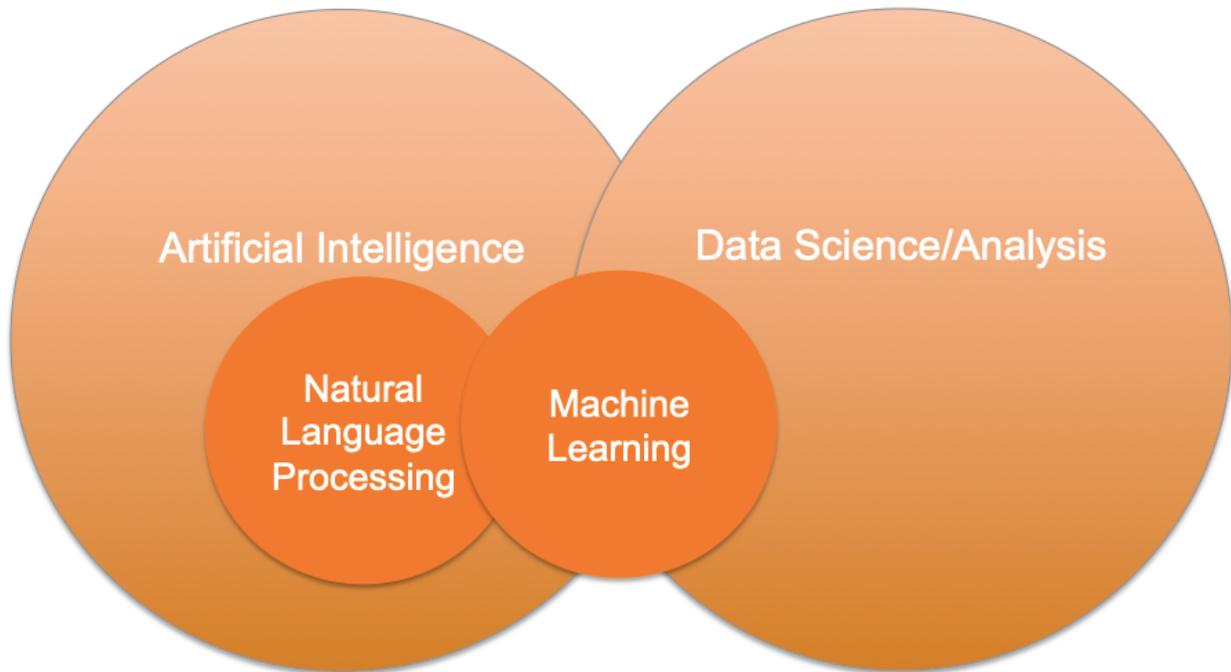


[Roberto Angulo](#)

Technology CEO | Board Member | AI and HR Tech Advisor | Author

At [Recruitology](#), we're using Artificial Intelligence (AI) and more specifically, Machine Learning and Natural Language Processing to intelligently distribute jobs for employers. The goal is to get employers quality job applicants at the optimal cost.

Artificial Intelligence, or AI is a broad field that encompasses Machine Learning (ML), Natural Language Processing (NLP), vision, and other areas such as deep learning.



Natural Language Processing or NLP, helps computers understand and interpret human language. We use NLP to extract meaning from the words in job postings. Job descriptions and job titles are written differently, even when they refer to the same type of role. For example, “software developer”, “programmer” and “engineer” are different ways to refer to a software engineer. NLP helps us sift through these variations and determine if we should treat these jobs the same.

Machine Learning (ML) is a part of AI that deals with training computers. We train computers by giving them data so they can identify patterns and take action based on prior data. Here, we’re using Machine Learning to keep track of how various job titles and descriptions have been classified, and if they’ve been classified accurately, so we can apply the same rules going forward. We also use Machine Learning to track where jobs were posted, how much was paid, and how each of those jobs performed in terms of clicks, applicants, and ultimately, candidates. This helps predict future performance.

One big problem AI solves in recruiting

There are dozens of great job sites. There’s Indeed, LinkedIn, Glassdoor, CareerBuilder, Craigslist, Nexxt, and hundreds of niche sites focused on specific audiences and disciplines. If you’re an employer with 100 jobs, or even 10 jobs, how do you figure out where to post?

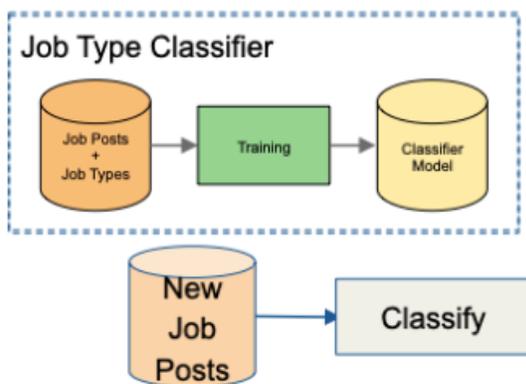
An accounting job may do well on [AccountingJobsToday](#), whereas a software development internship may do well on [AfterCollege](#), a freelancer role may get more candidates on [Moonlighting](#) and a customer support roles will do well on [Indeed](#). Figuring this out for even one job is hard. You may need to post on 3 to 4 sites to see where your jobs will get the best candidates.

But try doing it for 10 or 100 jobs. This can cost a lot of money and time.

AI to the Rescue

This is where AI comes in. In this use case, we take a job posting and based on its job title and description, we quickly determine what job type it belongs to and what skills are associated with the job.

Machine Learning learns from past jobs it has processed and automatically figures out how to best classify jobs for distribution.

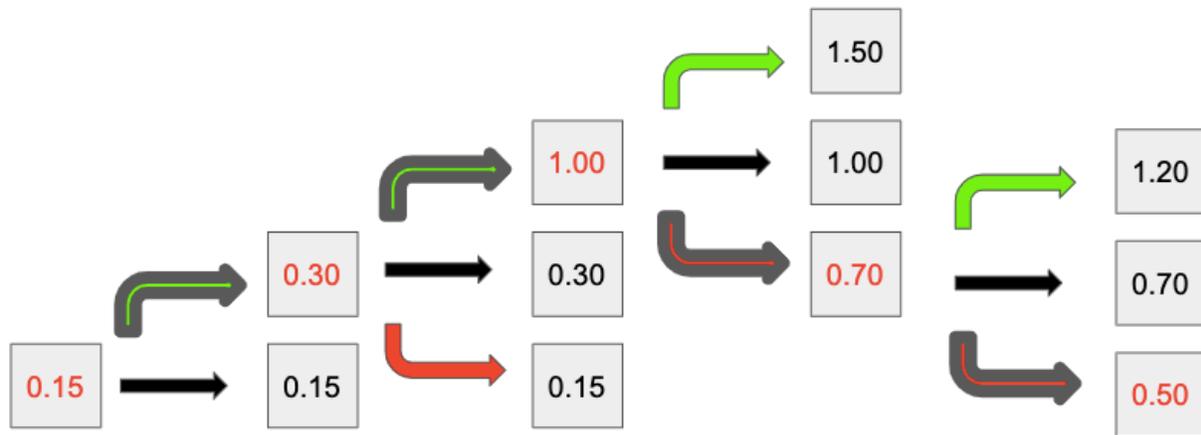


Machine learning helps to better classify jobs on a massive scale.

Job Title	Job Type
Tax Accountant	Accounting
Auditor	Accounting
Small Engine Mechanic	Maintenance
Water Operator	Maintenance
Network Engineer	Software Development
Application Developer	Software Development

With dozens of job sites accepting job postings on a CPC (cost per click) basis, we also use AI to determine where to post the job. The AI also determines the starting bid to give each job, on each of the job sites. And once the job is posted, AI checks to see how many clicks and applies the job has received, and then adjusts the click price for each job on each site up or down, depending on the results.

The AI keeps track of past bids for each type of job on each site and knows what to set as a starting bid. Over time, it then adjusts the bid up or down, or leaves it alone.



Machine Learning assigns each job with an initial bid amount for each job site where the job gets posted. It then lowers or increases the bid over time depending on whether the job is getting enough clicks on each site.

All this happens in seconds when you use machine learning. It's not rocket science, but it does require a lot of math and optimization to do the heavy lifting of determining where to post, how much to bid, and when to adjust bids, by how much, and when to take down the job.

In a given month, we may do this for 20,000 jobs. If we were to do this manually, it would require a warehouse of people working non-stop.

Example:

20,000 new jobs/month * 100 sites * 10 times/day * 15 days = **300,000,000 actions each month!**

We're able to leverage billions of data points from a collection of historical data in order to come up with good predictions on where a job will do well and what the optimal bid price will be, per job, per site, at any given point in time.

This is the beauty of AI and one of its applications. It helps automate the bidding process, and this automated bidding process improves over time the more it's used.

The end result, better ROI for employers in terms of better cost and quality per applicants and a shortening of the time to hire.