

The Ultimate Resume Screening Tool That Recruiters Should Know About

Jenny Wang | May 22, 2020



7,000

job openings

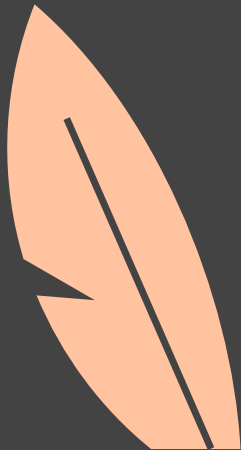
- Laszlo Bock, Head of HR, Google (2014)



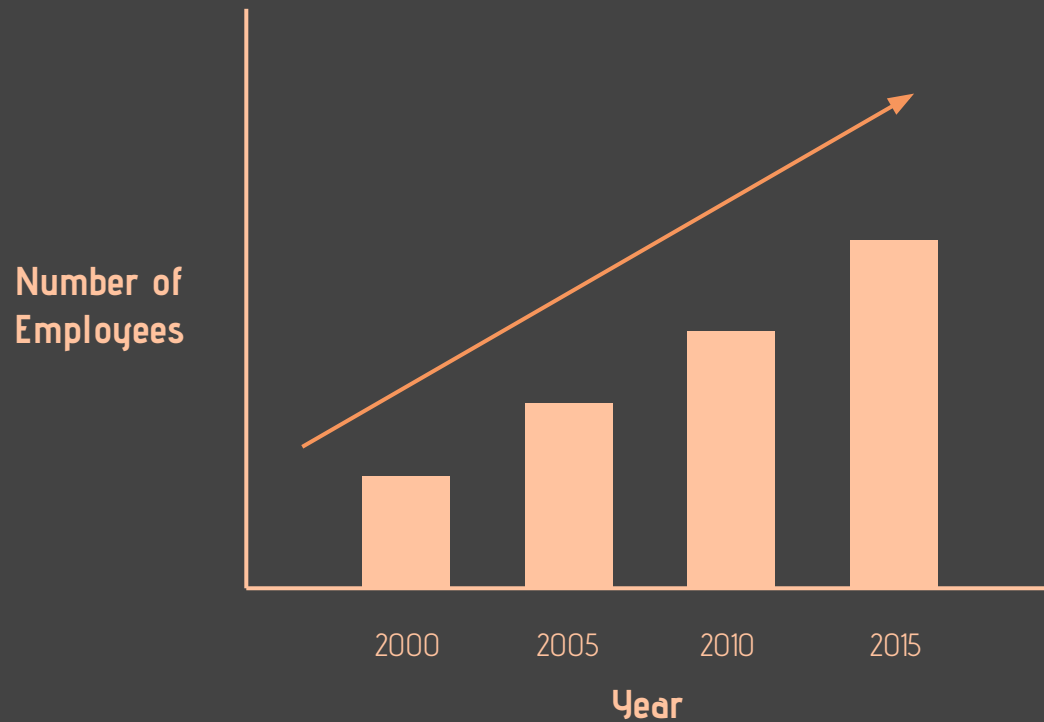
3 million

resumes received per year

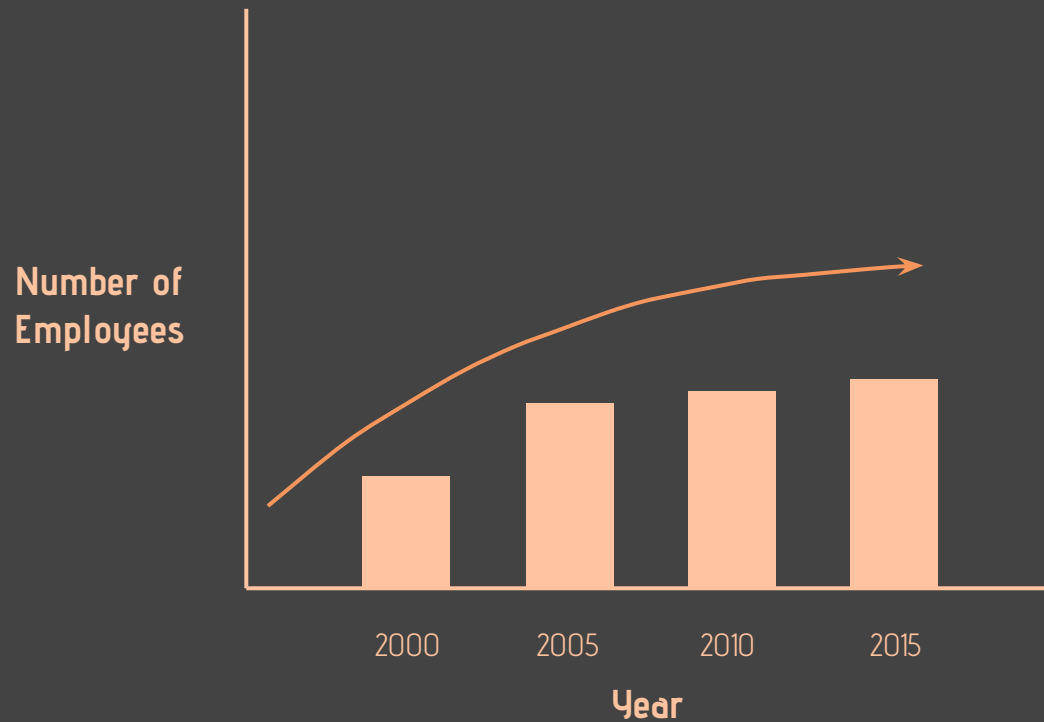
- Laszlo Bock, Head of HR, Google (2014)



Recruiting Team Growth



Recruiting Team Growth



The background is a solid light orange color. In the upper half, there are three stylized, rounded orange shapes representing clouds. In the lower half, there is a large, wavy orange shape representing a hill or dune. At the base of this hill, on the left and right sides, are two dark blue, stylized plant or leaf motifs.

Resume Recommendation System

APPROACH



Data Collection

80,000 job listings
1,000 resumes
(Kaggle)



Text Preprocessing

stop words removal
part-of-speech tagging
lemmatized
alpha characters



Topic Modeling

LDA



Recommendation System

cosine similarity

Intertopic Distance Map

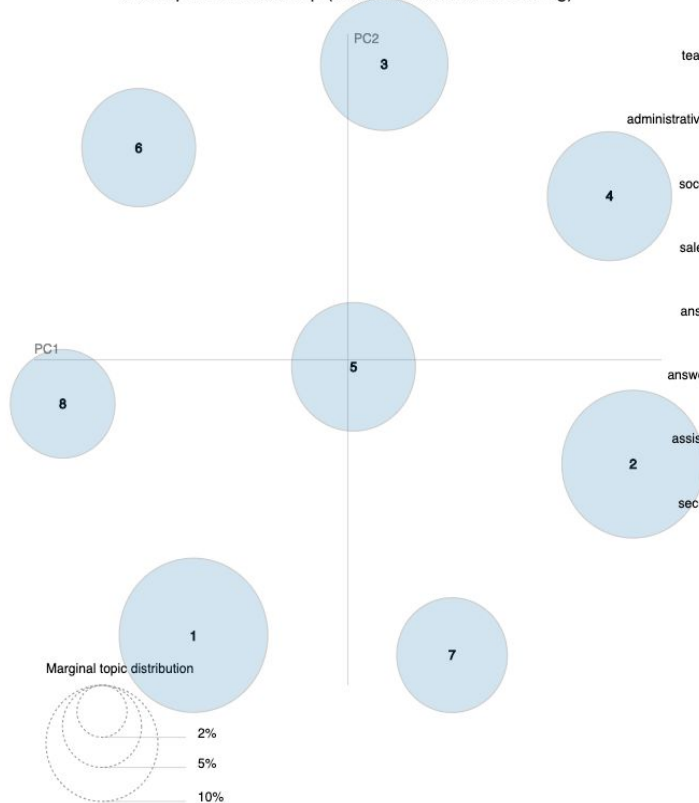
Selected Topic: Previous Topic Next Topic Clear Topic

Slide to adjust relevance metric:⁽²⁾

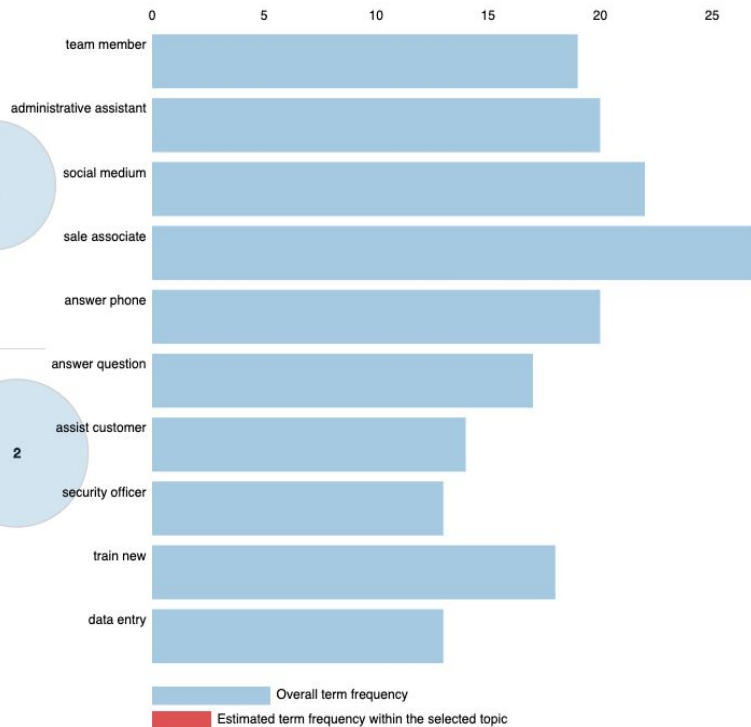
$\lambda = 1$

0.0 0.2 0.4 0.6 0.8 1

Intertopic Distance Map (via multidimensional scaling)



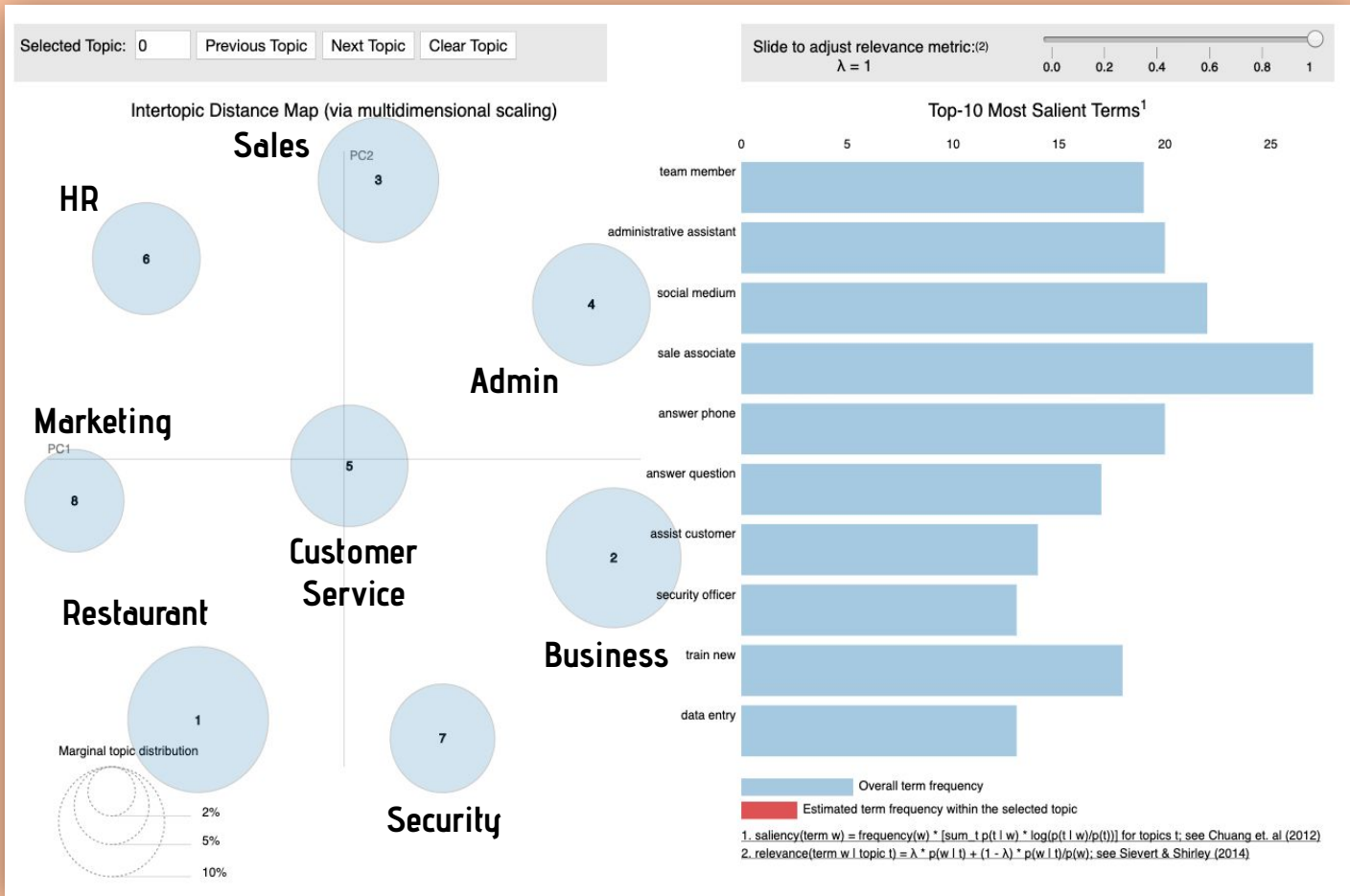
Top-10 Most Salient Terms¹



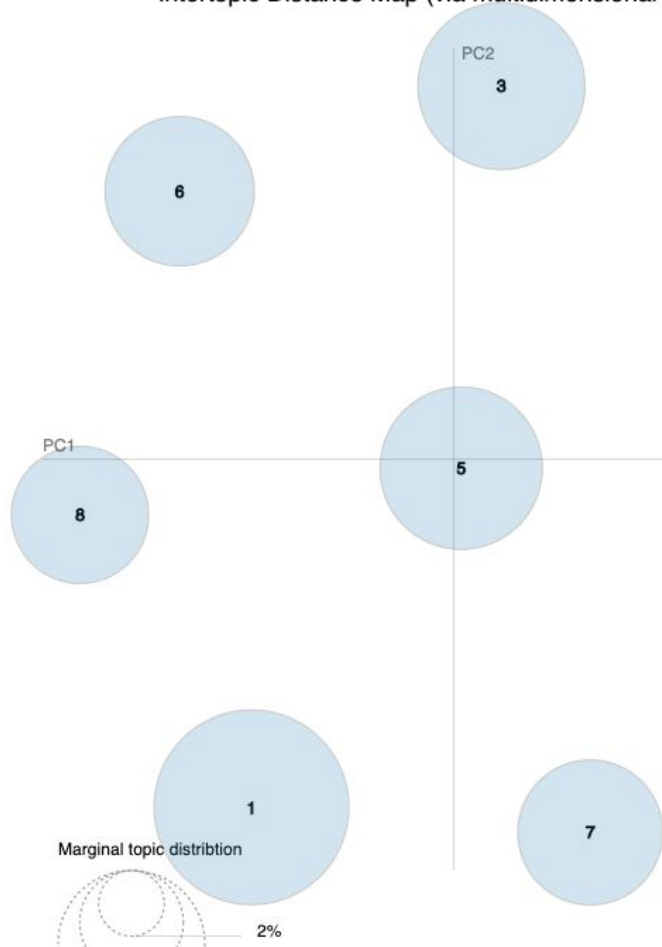
¹ $\text{saliency}(\text{term } w) = \text{frequency}(w) * [\sum_t p(t | w) * \log(p(t | w) / p(t))]$ for topics t ; see Chuang et. al (2012)

² $\text{relevance}(\text{term } w | \text{topic } t) = \lambda * p(w | t) + (1 - \lambda) * p(w | t) / p(w)$; see Sievert & Shirley (2014)

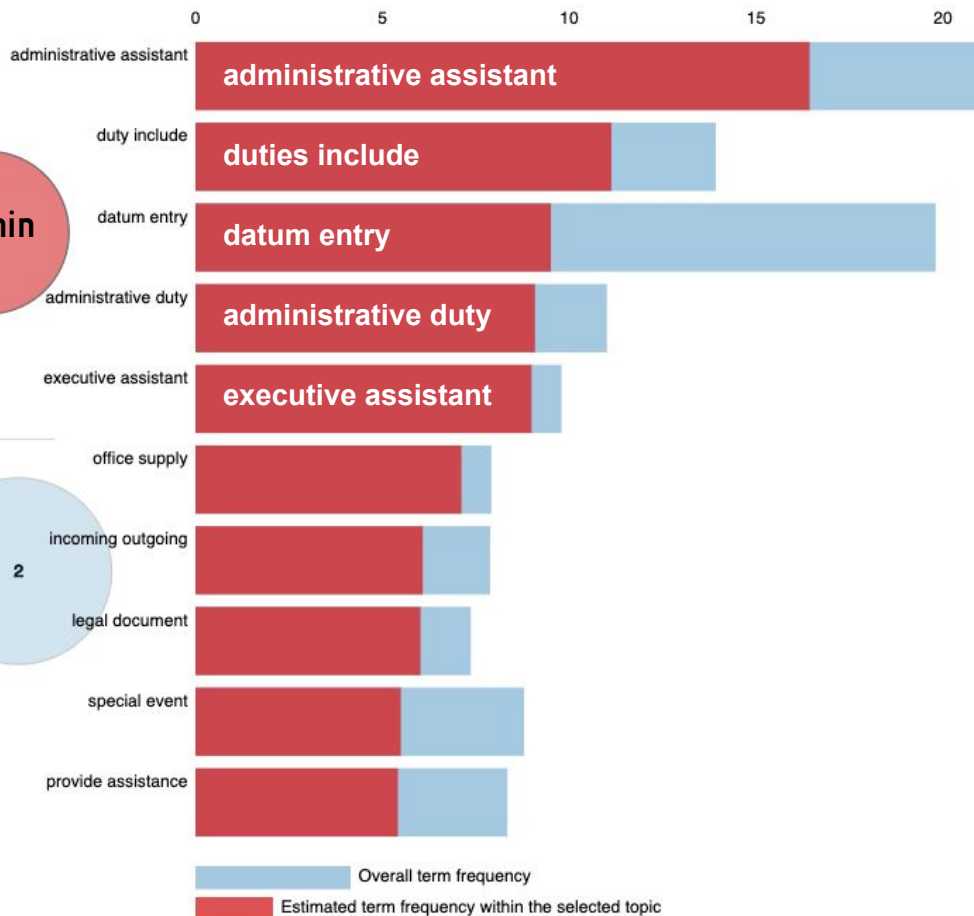
Intertopic Distance Map



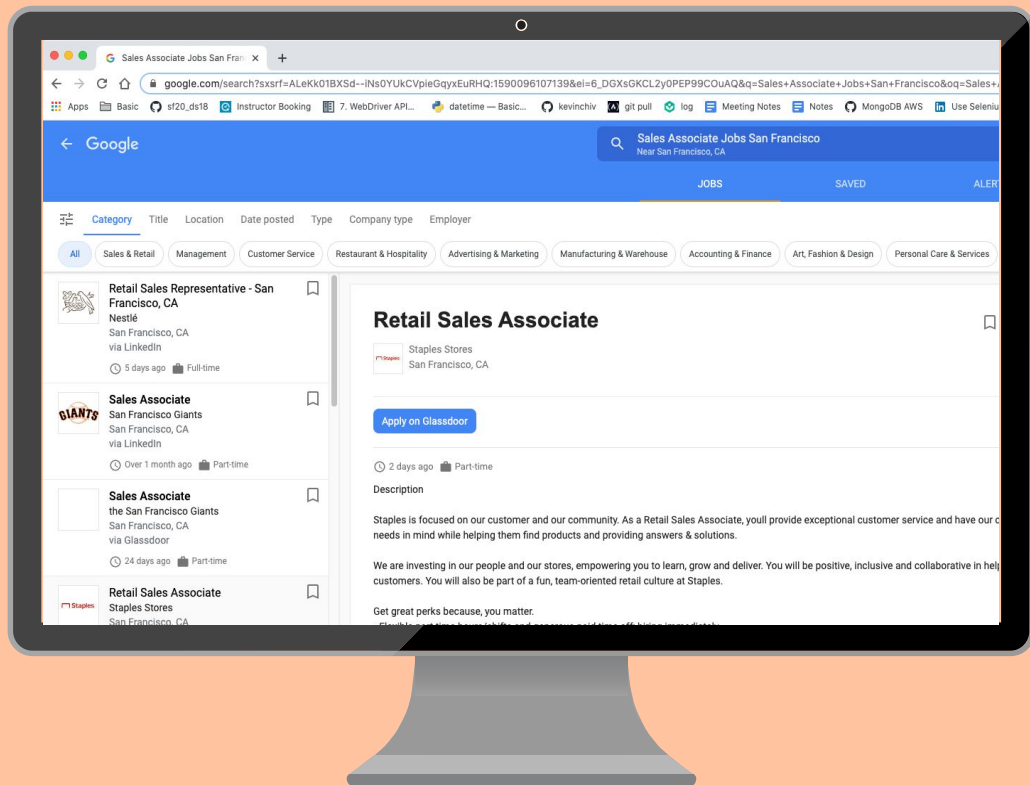
Intertopic Distance Map (via multidimensional scaling)



Top-10 Most Relevant Terms for Topic 4 (12.3% of tokens)



Let's take a look at a real job listing ...



We'll take a
closer look

Retail Sales Associate

SAVE



Staples Stores
San Francisco, CA

Apply on Glassdoor

2 days ago Part-time

Description

Staples is focused on our customer and our community. As a Retail Sales Associate, you'll provide exceptional customer service and have our customers needs in mind while helping them find products and providing answers & solutions.

We are investing in our people and our stores, empowering you to learn, grow and deliver. You will be positive, inclusive and collaborative in helping our customers. You will also be part of a fun, team-oriented retail culture at Staples.

Get great perks because, you matter.

- Flexible part time hours/shifts and generous paid time off; hiring immediately
- Associate store discount and more perks (discounts on mobile plans, movie tickets, etc.)
- 401(k) plan with a company match, dental, vision and life insurance, short-term disability, and many more benefits

Provide an exceptional customer experience.

- Respond quickly and resourcefully to customer requests and concerns
- Create a positive, inviting environment for customers

Play an active role in helping both your store and your customer win.

- Multitask on sales responsibilities and merchandising while maintaining a neat and clean store
- Understand and use basic selling skills to engage and present solutions

It requires
mostly
“customer
service”
experience

Retail Sales Associate

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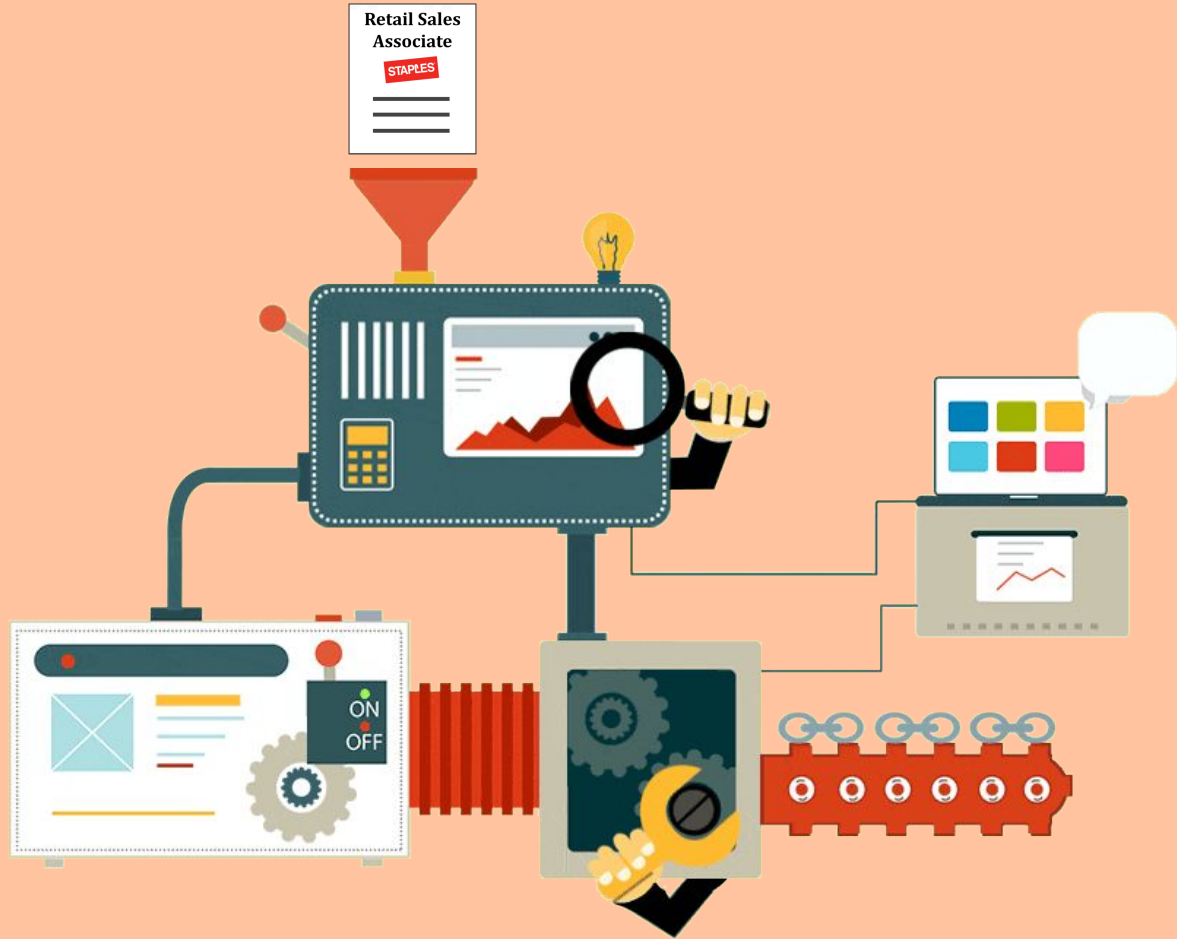
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**Put the job listing
through the
recommendation
engine!**



Recommended Resume #1



- Accommodated guests with special meal requests
- Tracked guest satisfaction throughout the meal to ensure a pleasant experience

...

Recommended Resume #2



- Assisted with answering questions regarding store policies, processing their returns and merchandise.
- Restock sales floor, help customers locate items.

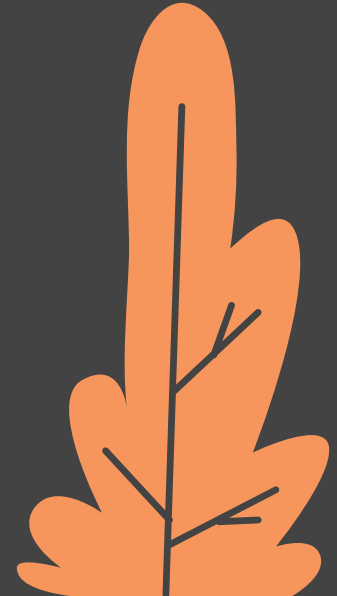
...



THANK YOU

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APPENDIX



FUTURE WORK

- Obtain **company data** on job description, candidate resumes, and additional internal information (job level)
- Work with Recruiters to **apply supervised learning techniques**, using screened-in resumes
- Work with Engineering to apply **user feedback loop** to continuously improve the recommendation engine

Here are the 8 topics!

CUSTOMER SERVICE

ADMIN

MARKETING

SALES

SECURITY

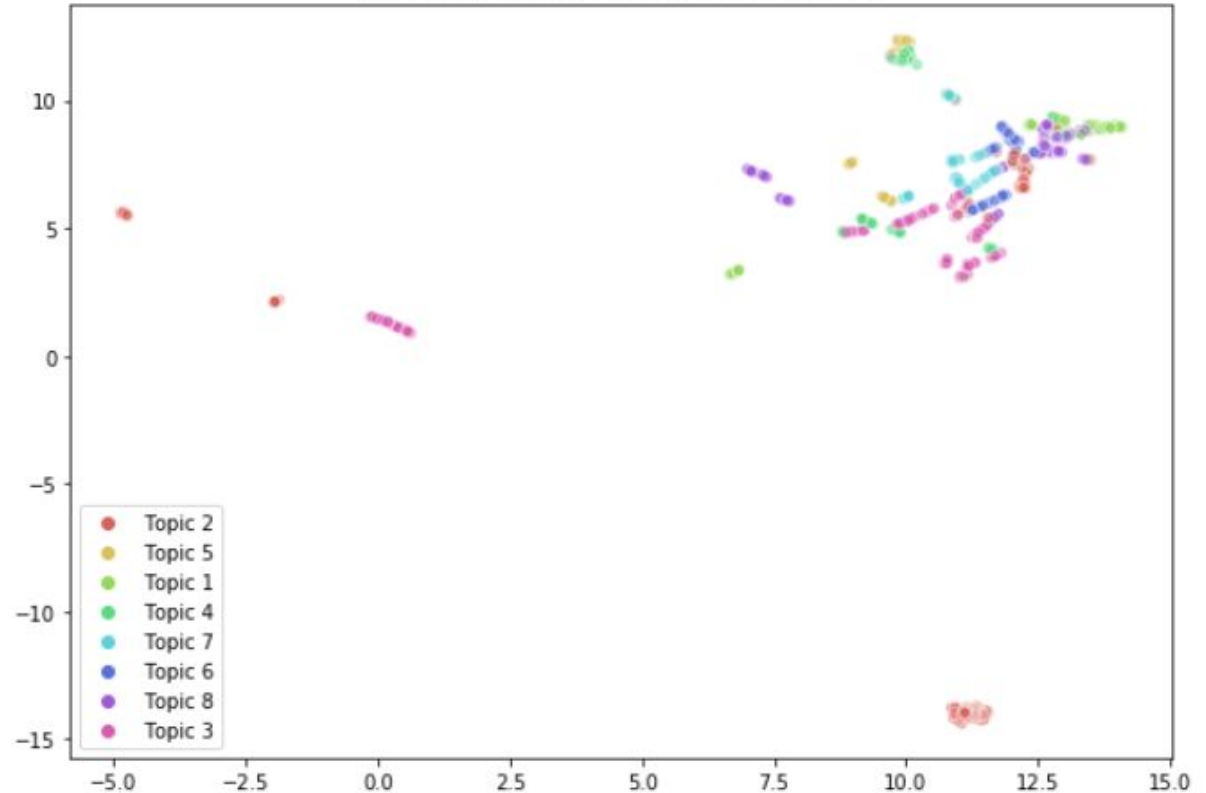
BUSINESS

HR

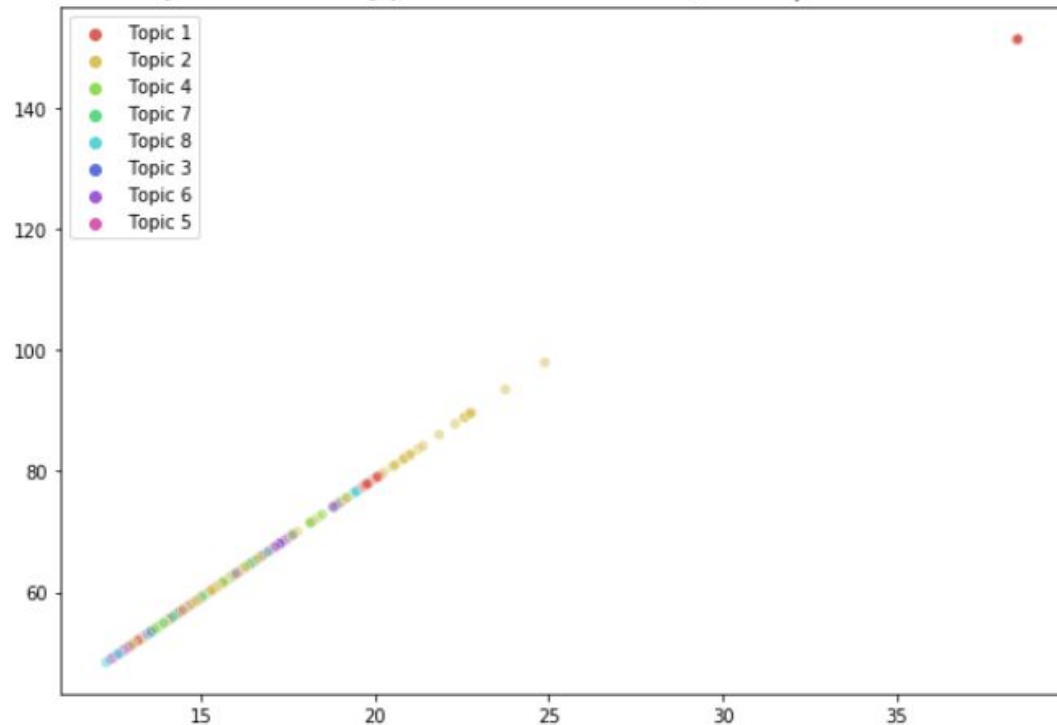
RESTAURANT

UMAP

UMAP Projection of Types of Resumes
(LDA | Euclidean Distance)



UMAP Projection of Types of Resumes (NMF | Cosine Similarity)



UMAP Projection of Types of Resumes (LSA | Cosine Similarity)

