

Exploring the Demand for Tech Skills

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Research Question:

What are the most in-demand tech skills in the job market, and how do they align with Google search trends?

Why It Matters:

- Help students prioritize skill acquisition based on demand.

Data Sources:

- Job postings via Adzuna API.
 - i. Queried 11 key roles and analyzed 2,000+ job postings
 - ii. Fields retrieved: Job titles, descriptions, locations, salaries, and levels.
- Search trends via Google Trends API from 2018 to 2023

Key Methodology:

- Data Management
- Text analysis to extract skills from job descriptions.
- Correlation analysis between job market demand and search interest

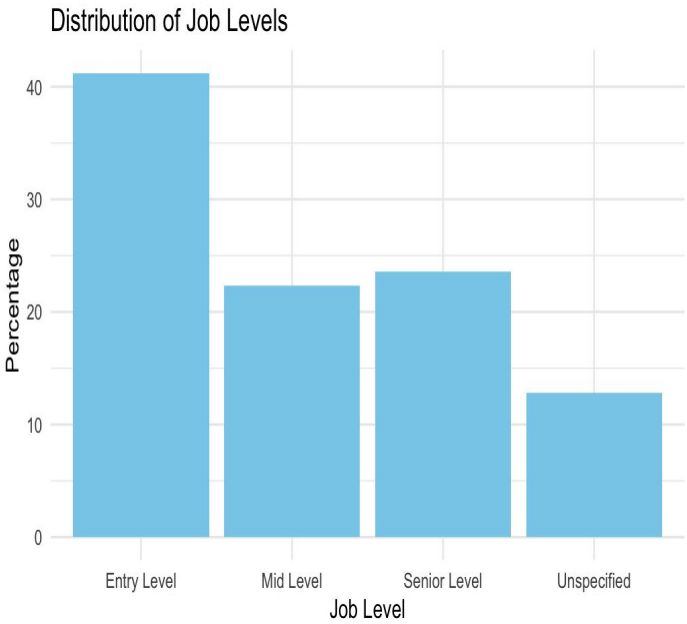
DATA DESCRIPTION

Table 1: Summary of Data Sources Used

Source	Description	Key_Variables	Limitations
Adzuna API	Job postings data for various tech-related roles across the US	Job title, location, salary, description, job level	Limited to jobs from Adzuna; not exhaustive of the job market
Google Trends	Search interest for tech skills over 2018-2023	keywords, interest over time, , regions	Limited to a maximum of 5 skills per query

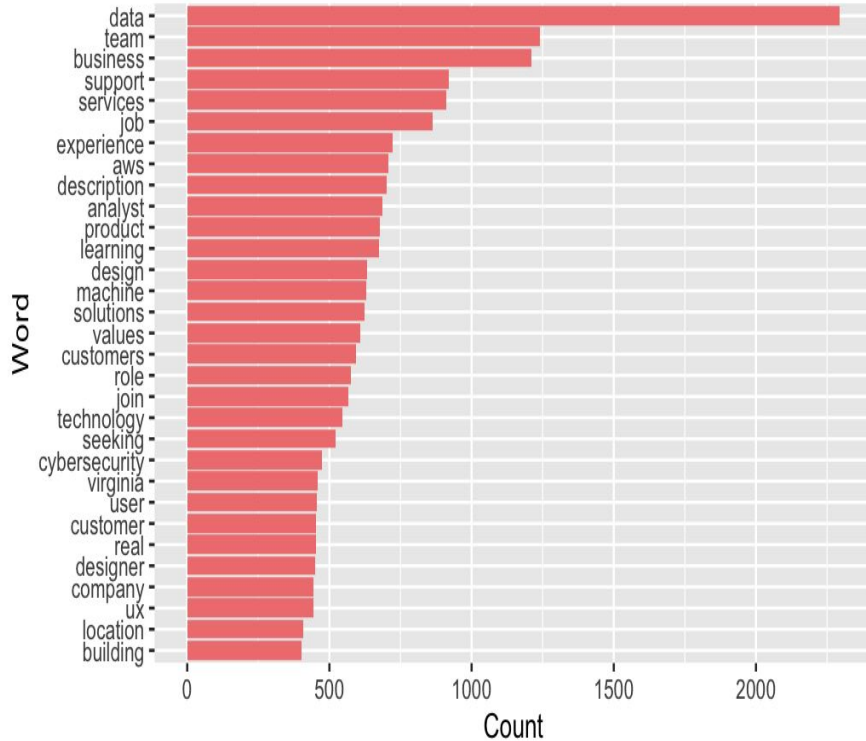
Table 2: Summary of some Key Variables

Variable	Description	Relevance
id	Unique identifier for the job posting	Key for data uniqueness
description	Text description of the job role	Used for text analysis to extract skills
salary_min	Minimum salary for the job posting	Used to calculate average salary
salary_max	Maximum salary for the job posting	Used to calculate average salary
created	Date the job posting was created	Helps filter recent postings
title	Title of the job position	Used to extract job roles
job_level	Categorized level of the job (Entry, Mid, Senior)	Used for analysis by job level

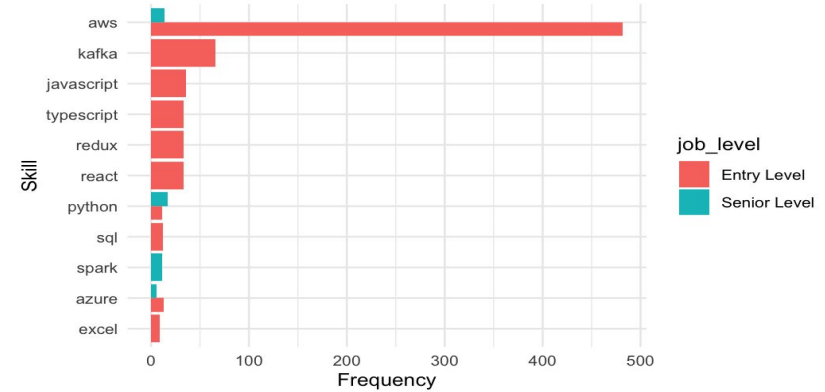


TEXT ANALYSIS

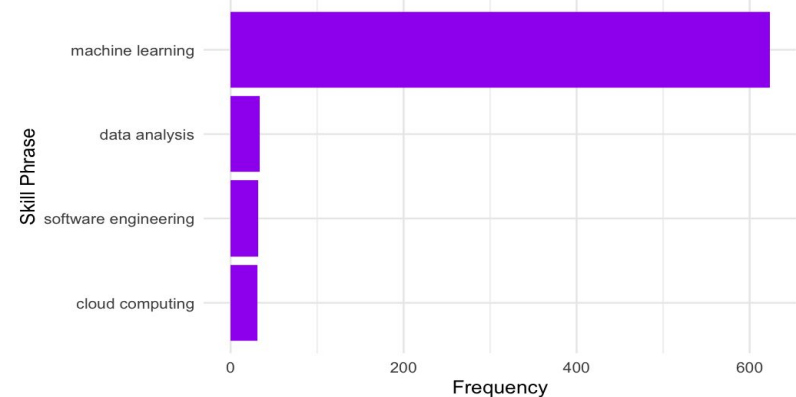
Most Common Words in Job Descriptions



Top Skills for Entry-Level and Senior-Level Jobs

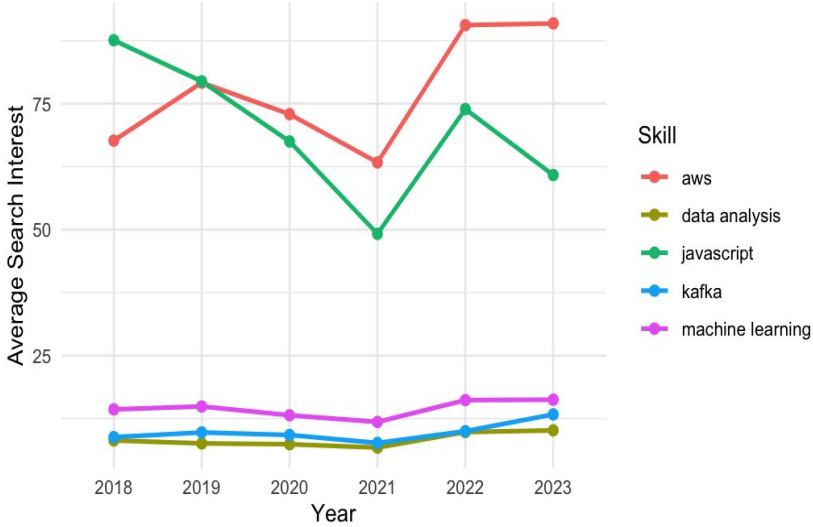


Most Mentioned Skill Phrases



COMPARATIVE ANALYSIS

Yearly Trends Comparison for Tech Skills



keyword<chr>	growth<dbl>
aws	34.35961
data analysis	24.48980
javascript	-30.54234
kafka	50.94340
machine learni...	13.37209

Skill Demand vs Search Interest

Standardized Comparison of Skills

