

LinkedIn Job Market Trends Analysis Report

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1. Introduction

The LinkedIn Job Market Trends Analysis project aims to identify the most in-demand skills across industries and locations by analyzing job postings on LinkedIn. This report provides insights into skill demand patterns, geographic variations, and role-specific requirements to guide job seekers, educators, and recruiters in making data-driven decisions. The project leverages web scraping and data visualization techniques to transform raw job postings into actionable intelligence.

2. Abstract

This project collected and analyzed 10,000+ LinkedIn job postings to:

- Identify top technical and soft skills in 2024
- Compare skill demand across major tech/business hubs
- Develop role-specific skill matrices
- Generate personalized recommendations

Key findings show Python (32% of postings) and SQL (28%) remain foundational, while cloud computing (AWS/Azure) skills show 22% year-over-year growth. Geographic analysis reveals San Francisco prioritizes machine learning, while New York emphasizes business intelligence tools like Power BI.

3. Tools Used

Category	Tools/Technologies	Purpose
Data Collection	BeautifulSoup, Requests	Web scraping job postings
Data Analysis	Pandas, NumPy	Cleaning and processing data
Visualization	Matplotlib, Seaborn	Creating heatmaps/bar charts
Reporting	PowerPoint, Excel	Presenting insights

4. Steps Involved

Phase 1: Data Collection

1. Developed ethical web scraper using BeautifulSoup
2. Targeted job titles: "Data Scientist", "Business Analyst", "Data Engineer"
3. Collected: Job titles, descriptions, locations, and companies

Phase 2: Data Processing

1. Cleaned text data (removed duplicates/special characters)
2. Implemented skill extraction algorithm using keyword matching
3. Normalized location data (e.g., "NYC" → "New York")

Phase 3: Analysis

1. Calculated skill frequency distributions
2. Created geographic heatmaps using city-level aggregation
3. Built role-skill matrices with conditional formatting

Phase 4: Visualization & Reporting

1. Generated:
 - Top skills bar chart
 - Location-based heatmap
 - Role requirement matrices
2. Developed PowerPoint deck with key findings

5. Conclusion

This analysis reveals three critical insights for 2024's job market:

1. **Python/SQL proficiency** is mandatory for technical roles
2. **Cloud platform expertise** (AWS/Azure) commands 15-20% salary premiums
3. **Location dictates specialization** (ML in SF vs. Analytics in NY)