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About me



Education

Ph.D. in Molecular Biology
with **10+ years** of experience
applying rigorous analytical
methods in complex data
environments



Core Strengths

Exceptional Analytical & Communication Skills.
Expertise in deconstructing complex data and delivering clear, impactful visual presentations.



Technical Toolkit

Python (Jupyter), **SQL**, **Tableau**, **Excel**, and advanced **Statistical Modeling**.



Content

- ❖ **Project 1**

GameCo Video Game Sales Analysis



- ❖ **Project 2**

Preparing the Medical Staffing agency for the Influenza Season



- ❖ **Project 3**

Rockbuster Stealth Data Analysis



- ❖ **Project 4**

Instacart Grocery Basket Analysis



- ❖ **Project 5**

German Job Market Analysis 2025



Main Insights...

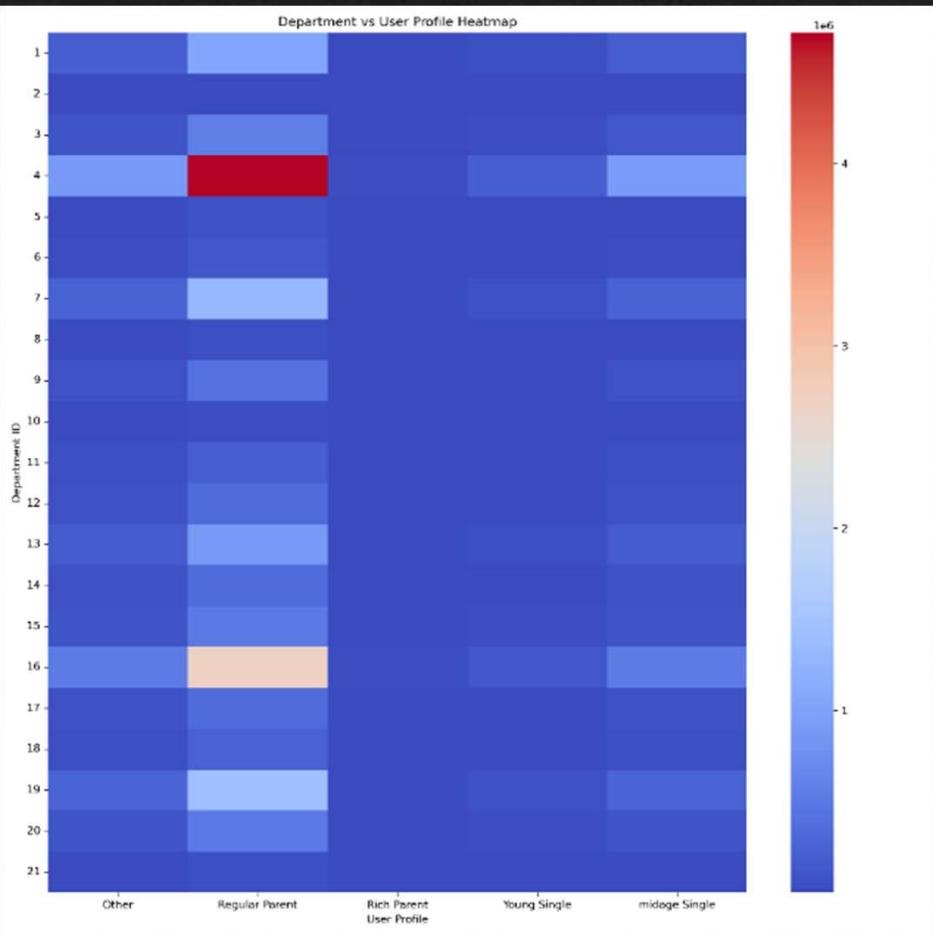
Department sales across Customer profiles.

Heatmap illustrating the number of orders in each department for each user profile.

The regular parents have a different list of goods than other profiles. The user profile is defined based on several conditions. see column derivations for details.

Full Analysis :

https://1drv.ms/x/c/0fdf032c13c923fa/IQCOfO9d4oMaRltw0-HKGpl5ASxPD2VsA8Q2W_5PjyAXOt?e=Nv0Bzd



Recommendations...

Conclusions:

- ◊ Peak Order Times: Order volume peaks daily between **2-4 PM** and weekly on **Friday/Saturday**. **Highest spending** occurs between midnight and 7 AM.
- ◊ Product Pricing & Focus: The majority of products are in the **low-to-mid price range (below \\$15)**. Departments ID 4 and ID 16 are highly popular.
- ◊ Customer Loyalty: The customer base is split between **Regular Customers (49%)** and **Loyal Customers (32%)**.
- ◊ Regional Concentration: The South has the highest customer density, including the full spectrum of high and low spenders.
- ◊ Segmentation Failure: Current customer profiles, while demographically distinct, show **no significant differences** in order frequency or expenditure, limiting their use for targeted marketing.

Recommendations:

- ◊ Optimize Ad Strategy: Avoid advertising during the 2-4 PM peak; shift premium product ads to the high-value **midnight-7 AM** window.
- ◊ Streamline Product Strategy: Adopt a simplified **3-tier pricing model** for marketing purposes; prioritize analysis and inventory in key departments ID 4 and ID 16.
- ◊ Boost Loyalty: Implement targeted programs to convert the large **Regular Customer** segment into **Loyal Customers**.
- ◊ Regional Investment: Focus marketing and service resources on the high-density **South** region.
- ◊ Refine Segmentation: Immediately develop new, actionable customer profiles based on **behavioral data** (e.g., specific products ordered, basket size) to reveal real differences in purchasing habits.

Project 5

The German Job Market 2025

Strategic Analysis

Identifying key trends in salary, demand, and hiring patterns. Special look at the German employment trend from 2010 to 2025.

Objectives....

- **Which industries and regions are experiencing the highest demand and growth?**
- **What factors (e.g., experience, industry, location) are the strongest predictors of salary?**
- **How is the job market segmented in terms of salary vs. volume of opportunities?**
- **What is the long-term forecast for German employment trends?**

Data and Methods....

Data: The analysis is based on a synthetic German Job Market 2025 Dataset from Kaggle (Dataset 1) and German employment/unemployment numbers from 2010–2025 (Dataset 2, Labour force survey).

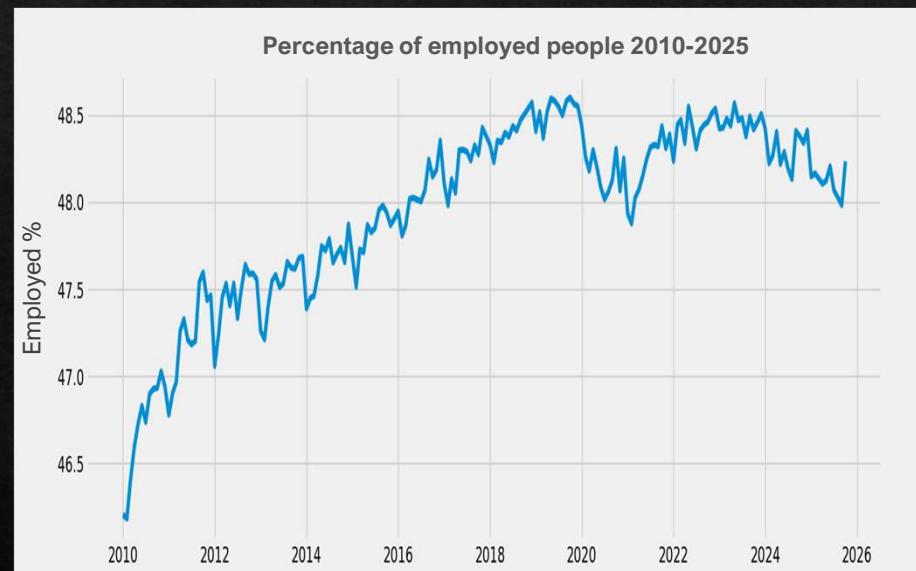
Methods:

Data Processing:

- The project began with essential data wrangling and cleaning of both the synthetic German Job Market dataset and the historical German Employment Time Series data.
- Comprehensive Exploratory Data Analysis (EDA), which involved generating descriptive statistics, correlation matrices, and specialized visualizations like heatmaps and geospatial plots.
- Building upon the EDA, predictive modeling was performed, including Linear Regression and K-Means Clustering to segment the market into clusters.
- Finally, the historical employment data underwent Time Series preparation, utilizing a 12-month lag seasonal differencing step to achieve stationarity necessary for robust long-term forecasting.

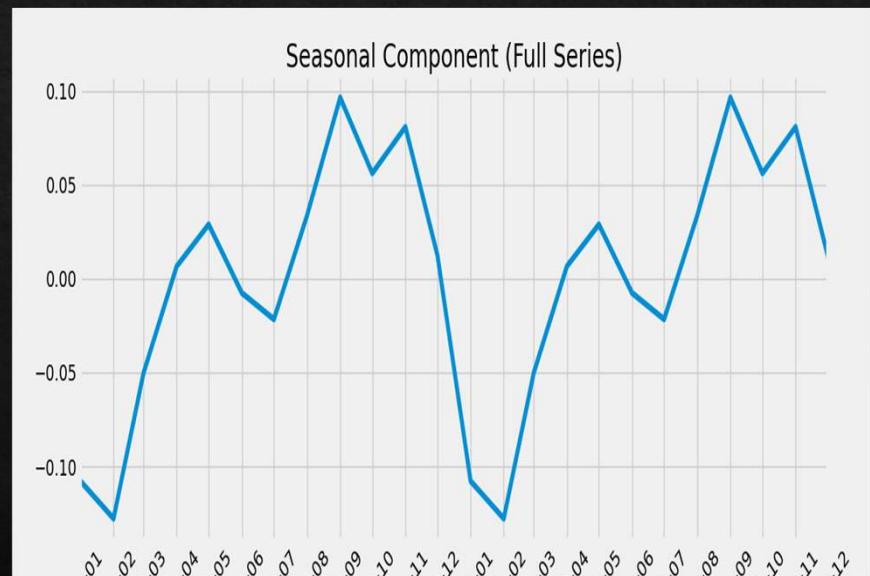
Main Insights...

How is the German employment 2010-2025 behaving?



Wide look at the German Employment over the years 2010-2025 shows uprising trend with a drop in 2020-2022 probably due to COVID-19 Pandemic.

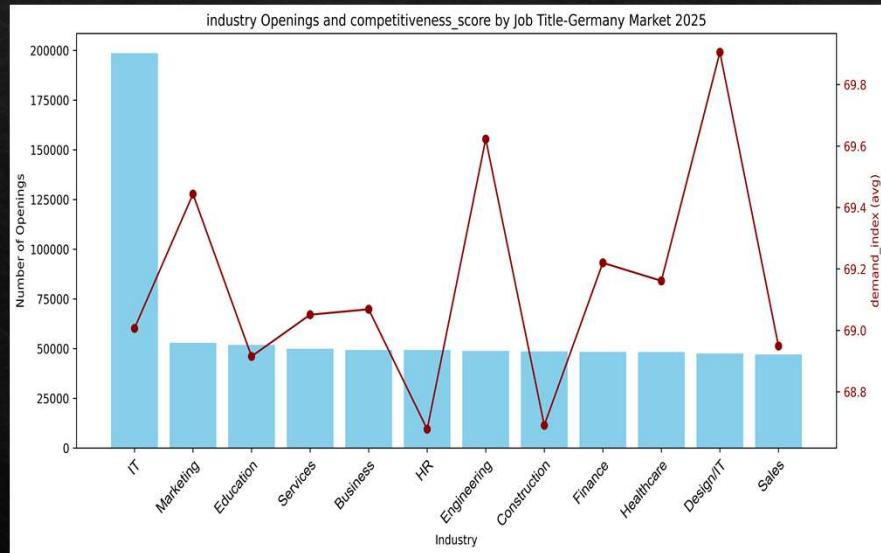
Seasonal cycles is observed as expected from Job Markets in general.



A close-up on the seasonal cycle of German employment shows big drops in January and July. i.e, beginning and mid of the year where contract exchanges usually occur.

Main Insights...

Which industries and regions are experiencing the highest demand and growth?



IT industry is the highest with job openings and demand index in 2025.

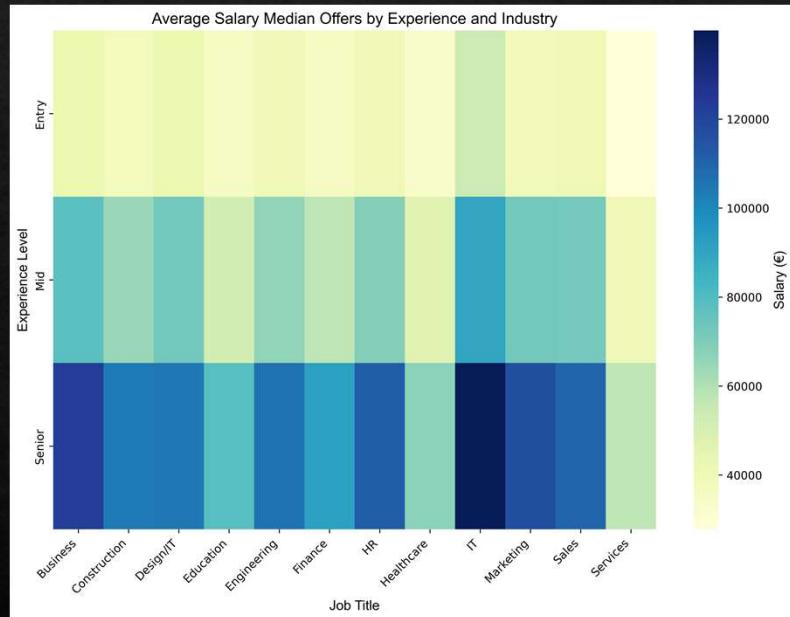
No significant difference in job openings between job roles, but UX Designers have the highest competitiveness score.



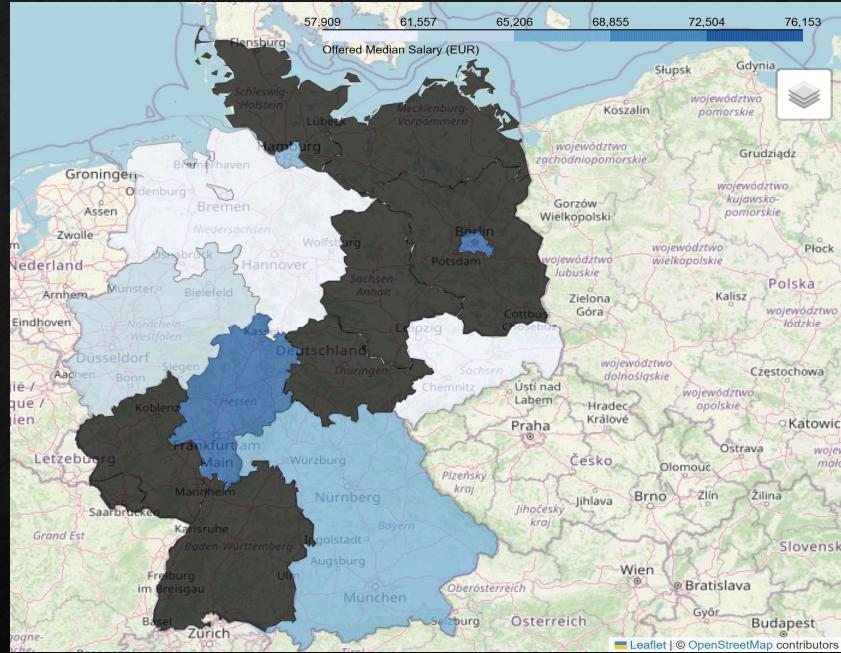
A geospatial view of the number of job openings across the German states illustrates that job openings are concentrated in North Rhine-Westphalia followed by Bavaria. This consistent with high demographics in those states.

Main Insights...

What factors (e.g., experience, industry, location) are the strongest predictors of salary?



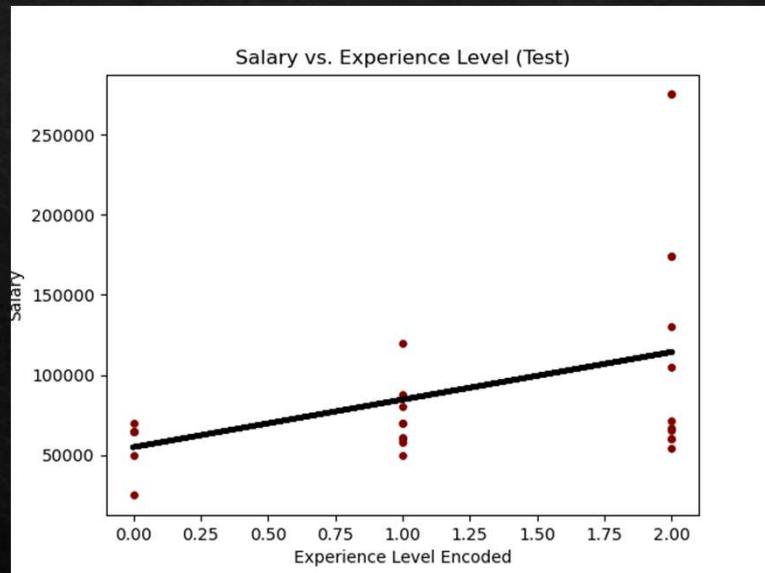
Median salary analysis across industries shows a clear upward trend with increasing experience level. Among industries, IT offers the highest salaries, followed by the business sector. Across job titles, Product Manager, Development Operations Engineer, and Data Scientist roles command the highest median salaries.



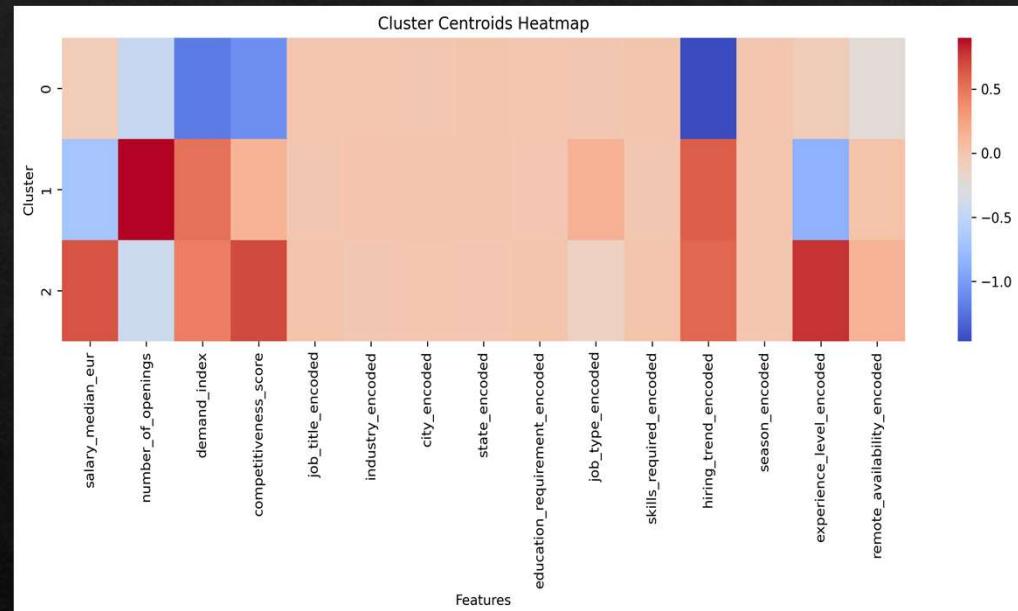
Geospatial distribution highlights that Berlin and Hessen provide the most competitive salary packages, followed by Bavaria and North Rhine-Westphalia, reflecting the concentration of high-paying opportunities in major economic hubs. High living costs in those states should be considered in later analysis.

Main Insights...

How is the job market segmented in terms of salary vs. volume of opportunities?



Experience level is the only strong predictor of salary (explaining approximately 57% of the variation).



The German Job Market has three K-Means clusters.
Cluster 1: Low salary/experience, but high number of openings/demand (Modest but Abundant).
Cluster 2: Highest salaries/experience/competitiveness, but fewer openings (Lucrative & Scarce).

No major effect of location, education, skills, or job role.

Recommendations...

Conclusions:

- ❖ The job market is highly dynamic, with IT and Engineering driving demand, but competition is intense for specialized roles.
- ❖ Experience is the strongest determinant of salary, significantly outweighing factors like industry, job title, or location for prediction.
- ❖ The market is segmented into high-value, high-experience, scarce jobs (Cluster 2) and high-volume, lower-salary jobs (Cluster 1).

Strategic Recommendations for Job Seekers:

- ❖ **Target IT/Engineering:** These industries lead in job openings and offer the highest salaries, making them strategic career targets.
- ❖ **Focus on Experience:** Given its status as the strongest salary predictor, job seekers should prioritize roles that offer clear career progression and maximize experience acquisition.
- ❖ **Location:** Consider North Rhine-Westphalia/Bavaria: For the highest volume of opportunities.
- ❖ **Education Foundation:** A Bachelor's or Master's degree is the standard requirement for most roles. But be prepared for high competition in specialized roles in terms of skills or higher education.



New Project
Loading...



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