

Project Title: Data Professional Salary & Satisfaction Analysis for Data Jobs

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1. Business Case & Problem Statement

The goal of this project was to analyze the global data workforce to understand what drives high salaries. Using survey data from thousands of professionals, I aimed to predict a professional's **Salary Bracket** based on their demographics and skills.

2. Data Preparation (Power BI & RapidMiner)

- **Cleaning:** The raw data contained missing values and inconsistent formatting. In Power BI, I transformed the salary text columns into usable categories. In RapidMiner, I filtered out rows where the target variable (Salary) was missing and the Level of degree for some who filled the survey, but they skipped typing level of degree.
- **Feature Selection:** I selected key features for the model including Job Title, Country, Programming Language (e.g., Python/R), and Education Level.

3. Machine Learning Model Results

- **Model Used:** Decision Tree Classifier.
- **Why:** Decision Trees are easy to interpret and clearly show the "rules" the computer uses to decide a salary (e.g., "If Country = USA, then Salary is higher").
- **Accuracy:** The model achieved an accuracy of **46.82%**.
- **Interpretation:** The decision tree identified **Q12 - Highest Level of Education** as the strongest predictor of salary. This indicates that in this dataset, having an advanced degree (like a Masters or PhD) is the primary factor that places a professional into the higher salary brackets, regardless of which country they live in.

4. Conclusion The analysis reveals that education is the most significant determinant of salary within this professional group. The Machine Learning results complement the Power BI dashboard by proving that while many factors contribute to a career, academic specialization provides the highest statistical "Information Gain" for salary prediction. For data professionals, this highlights the long-term value of advanced degrees in a competitive global market.