Cloud Platforms Associated With the Highest Salaries

Owen Brown, Cole Smith

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Mirwais Parsa

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Executive Summary

Through a thorough analysis of the dataset, we were able to answer the question, "Which cloud platforms (AWS, Azure, Google Cloud) are associated with the highest salaries?" We analyzed the salaries earned across the different platforms and the association with the software used to establish the highest paid ones. Using the cleaned subset of Stack Overflow 2025 survey respondents with 5-10 years of experience, we compared the median salaries. Our research showed that AWS users earned the highest median salaries. Azure users earned the second-highest, and Google Cloud ultimately earned the lowest salaries. Additionally, an ANOVA significance test was conducted to determine whether or not the values of salaries differ significantly. Our results indicated that AWS remained the most financially rewarding software. With AWS performing as the highest earning platform, we believe that this could influence job decisions, hiring strategies, and certification courses in the future. Employees are going to look for jobs that pay them well, therefore preferring careers that utilize AWS to give them higher compensation.

Introduction

In the modern world of technology, there are three dominant cloud platforms used by millions of users: Amazon Web Services (AWS), Microsoft Azure, and Google Cloud Platform (GCP). Most companies have some sort of department that utilizes these platforms heavily. Having the ability to hire workers who understand and excel in skills involving these platforms is crucial for efficiency and overall productivity. A shortage of these skills allows for high-paying positions that deal with the platforms. Businesses must compete for the scarce employees who offer these skills. For this purpose, it is important to know which platforms yield the top talent

costs. In turn, job seekers also want to know which platform skillset will pay them the highest amount for their contributions. Ultimately, this creates a desire for both the company and the employee to understand which platform skillsets have the highest and lowest salaries so that companies can compete with each other to acquire employees, and workers can join a company that supports them financially. This analysis will explore the differences in salaries associated with users of the platforms AWS, Azure, and GCP.

Data and Methods

The data used to complete this analysis was the Stack Overflow 2025 developer survey. This dataset was a huge reference, with over forty-nine thousand rows before cleaning. Each row represents a respondent to the survey. The forty-nine thousand rows are accompanied by over one hundred and sixty columns, offering a plethora of information to be analyzed. With an extremely large dataset, it was important that we cleaned and managed the data before use. First, the large dataset included many sections with incomplete data, so we had to clear those out first to ensure that we had a competent dataset to work with. Any rows that were accompanied by incomplete data in the yearly compensation section had to be deleted in order for us to get our salary data correct. We then narrowed down our group of workers by filtering for USA respondents only. This allowed us to compare salaries measured in USD only, preventing any conversion issues. We also needed to balance our collection of data by sorting for only full-time employees. This was completed by filtering the "Employment" section to show only those marked as "Employed." Another function used to level the group was eliminating salary outliers. We only kept salaries that were above $30,000 and under $500,000 to eliminate any skewing of the data from outliers that were extremely low or high compared to the majority of employees.

One last measure made to clean the data was to add a range of experience. In the "YearsCodePro" section, we kept the years of experience between one year and thirty years at the maximum to prevent any extremely long-term employees from possibly skewing the data. This left the dataset with nine to ten thousand rows with responses that we could use, still plenty of data. With our cleaned data prepared, we were then able to calculate the median and average salaries by platform, along with visualization tools such as graphs and charts to display our data. Through the use of "matplotlib.pyplot" we were able to turn our data into various graphs and plots that displayed salary distribution, salary vs experience, and salary by top roles. We also ran an ANOVA test to determine if the difference in salaries is significant. These measures give us a good amount of information displayed to draw conclusions and further evaluate which platforms are tied to the highest salaries.

Results and Discussion
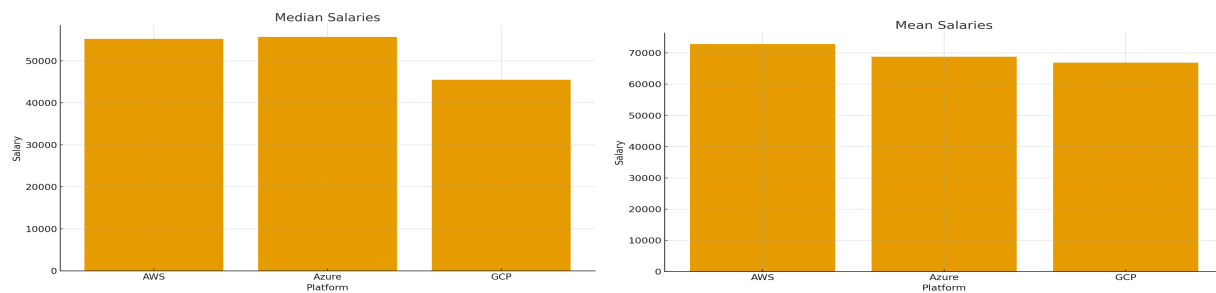
These bar graphs display both the median and mean salaries for each respective platform. Azure had the highest median salary, followed by AWS, and then GCP. In terms of mean, AWS was the highest average, with Azure coming next, and then GCP. In both calculations, GCP offered the lowest salaries. The higher mean, but lower median salary by AWS indicates that it may have a few highly-paid outlier that boost the average.
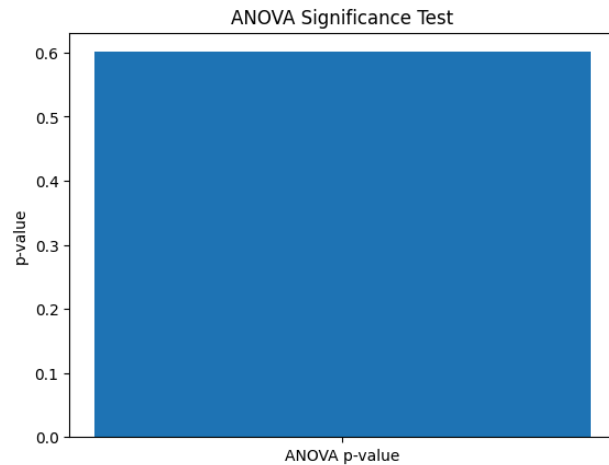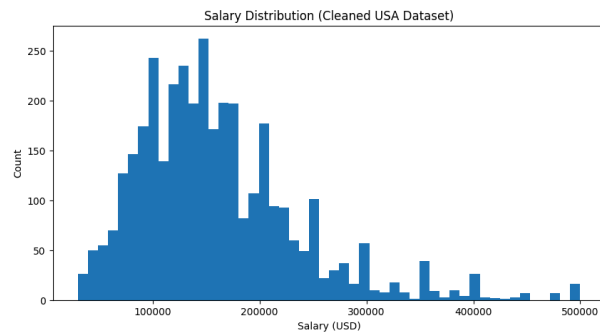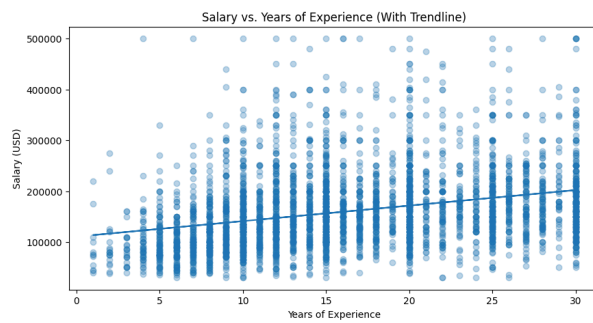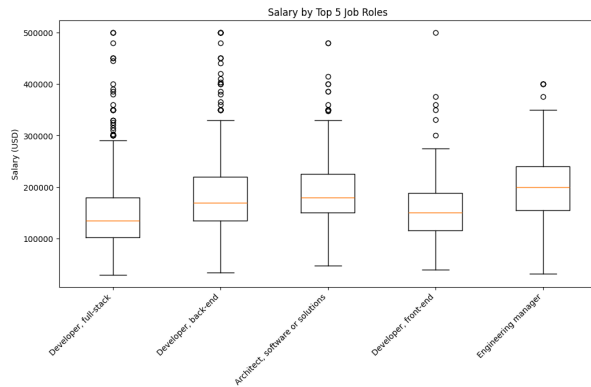
ANOVA p-value: 0.6009524569016399

The ANOVA test was conducted to reveal if the difference in salaries is statistically significant. No significant different found. (.05<P)
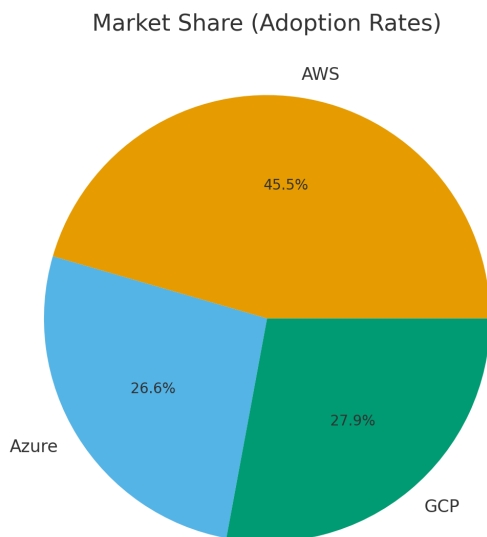
This pie chart represents the market share of adoption rates of the three different platforms. AWS leads the way with 45.5%, followed by GCP with 27.9%, and Azure with 26.6%. This metric shows us that AWS is by far the most widley used software with almost half of the market share. Azure and GCP follow behind, each earning over a quarter of the market share.

Salary by Top 5 Job Roles

Salary vs. Years of Experience (With Trendline)

Salary Distribution (Cleaned USA Dataset)

These additional graphs display the salary by top 5 job roles, salary vs years of experience, and salary distribution.

Limitations, Conclusion, and Implications

Cloud Certification ROI

Cloud certifications generally offer strong ROI because salaries across cloud-related roles are high and show significant upward potential (as seen in the outliers). Roles like Engineering

Manager and Architect earn the most, meaning advanced or multi-cloud certifications can lead to higher-paying leadership and design positions.

Which Platform to Standardize On

AWS is the most practical platform to standardize on because it holds the **largest market share**, meaning it's the most widely used in industry and offers the broadest career opportunities. Azure and GCP are valuable, but their demand is smaller and more dependent on company-specific ecosystems.

Skill Demand vs. Supply Dynamics

Salary variation and high-end outliers suggest **strong demand and limited supply** of advanced cloud skills, especially for senior architecture and management roles. Developer roles have tighter salary ranges, implying a larger supply of candidates. AWS skills are in highest demand due to adoption rates, while Azure and GCP skills remain competitive but less widely required.

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