EXPLORING SALARY DIFFERENCES IN TECH

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This study explores what factors affect salary in the tech industry, to give insights on what choices can be made to improve future income. This investigation gives a fresh student perspective on what influences tech salaries today.

INTRODUCTION

As students we spend time, money and effort developing our skills in the hope that this will provide us with rewarding opportunities in future. One element of this is financial reward we all need to earn enough to live and to fulfil our life ambitions.

We have taken a dataset of salaries in the IT industry (*Kaggle*, no date). The data was gathered from an online survey on gathering real data from people who work in the industry. This has been examined to see what factors are important for increasing our potential salary.

METHOD

We have taken a dataset of salaries in the IT industry (Kaggle, no date). Along with the salary the survey captured other factors such as

•job title
•location
•working patterns
•experience level
•office-based/remote working

The data was gathered from an online survey, on gathering real data from people who work in the industry.

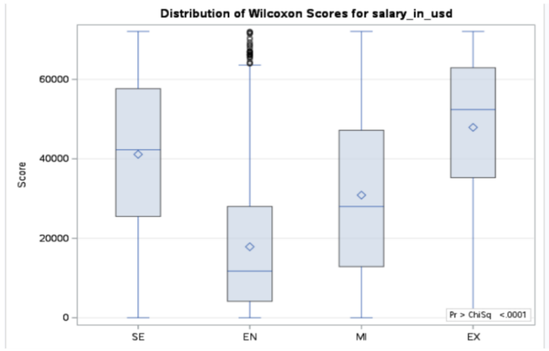
Obs	work_year	experience_level	employment_type	job_title	salary	salary_currency	salary_in_usd	employee_residence	remote_ratio	company_location	company_size
1	2025	SE	FT	Data Product Owner	170000	USD	170000	US	0	US	M
2	2025	SE	FT	Data Product Owner	110000	USD	110000	US	0	US	M
3	2025	SE	FT	Data Product Owner	170000	USD	170000	US	0	US	M
4	2025	SE	FT	Data Product Owner	110000	USD	110000	US	0	US	M
5	2025	SE	FT	Engineer	143000	USD	143000	US	0	US	M

The dataset shows a good cross section of the industry, but to reduce the risk of a small number of very high salaries affecting the results a decision was made not to include the highest 1% of salaries.
Statistical techniques have been used to identify features in the data that affect salaries.

RESULTS

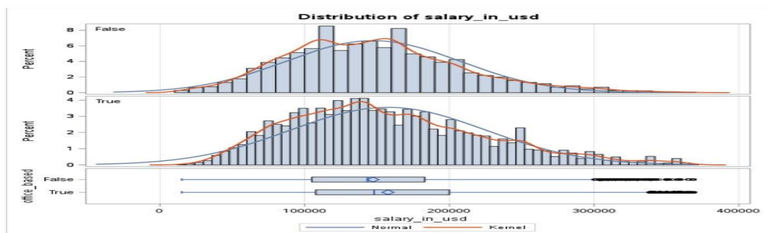
Respondents to the survey identified whether they were at Entry, Mid, Senior or Expert level.

It may seem obvious that greater experience and knowledge should lead to greater pay. It is reassuring that this study provides confirmation. Non-parametric Anova testing shows that average salaries do increase with the experience level.

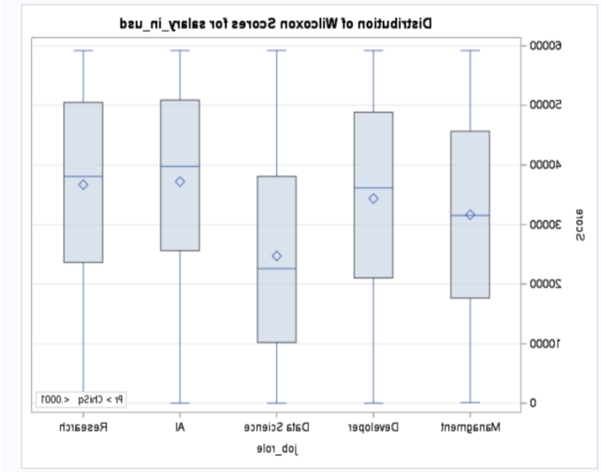


An increasingly important factor in the workplace is the rise of remote working. This study looked at whether being office-based influenced salaries.

Given that remote working might be biased to newer jobs or more experienced workers, it was surprising that office-based workers earned on average 10,000 USD more.



Unfortunately, main job titles in IT sound very similar, e.g. Software Engineer, Software Developer, System Engineer. In order to draw useful conclusions similar job tiles have been grouped together.
This study shows that on an average, salaries for Research and AI are not significantly different, but they are significantly better than roles in Management, Development and Data Science.



This data has been analysed using the non-parametric ANOVA test. This result shows salary for research and AI are not significantly different, but they are significantly better when compared to the other analysed groups

DISCUSSION

- The survey was run on the website aijobs.net, this whilst could provide a bias towards AI jobs.
- The data is very heavily weighted to responses from the US, so further work would be needed to confirm is these patterns hold outside the US.
- Most of the data comes from the US, GB and Canada this covers 95.6% of the data. Data containing a better spread of data would all comparisons between countries.

CONCLUSIONS

To maximise salary, we need to:
- Be prepared to work in office.
- Keep upgrading our skillset to become an expert.
- Work in AI or Research

REFERENCE

- *Kaggle* (no date) Available at: https://www.kaggle.com/datasets/aijobs/global-salaries-in-ai-ml-data-science (Accessed: 10/11/2025)