The Impact of AI on the CS Job Market Forecast Model

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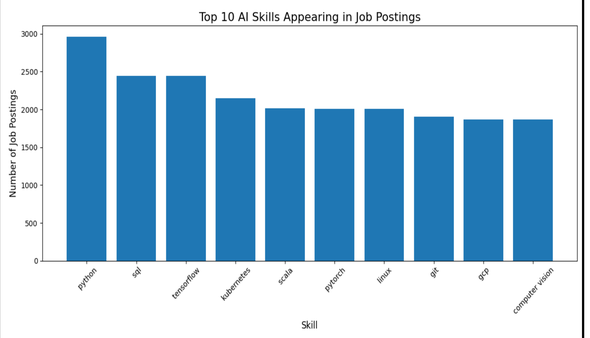
Research Problem

Our goal was to build a forecasting model to quantify AI's effect on Computer Science Job Volume.



Challenges & Contribution

Challenges:

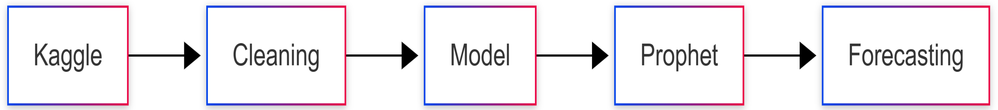
- Job data drastically varies based off different factors such as geography, experience and skills.
- Identifying important factors to make an accurate forecast
- Choosing the correct learning model for the best results

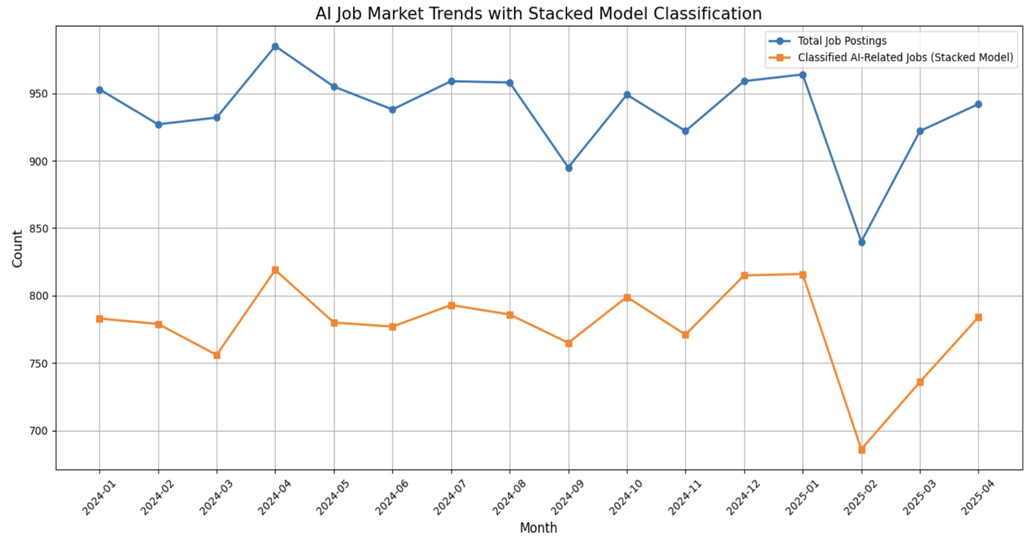
Contribution:

- Analyzed 15,000 AI job postings from 2024-2025.
- Built machine learning models to predict opportunities and overall impact.
- Used methods to find significant factors that will affect the ability to get a job

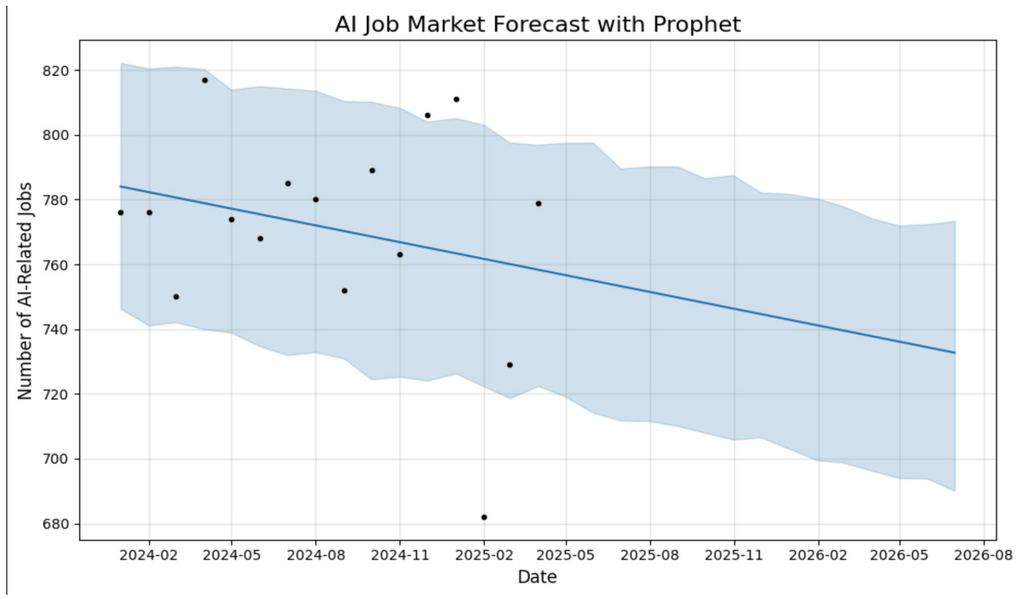
Proposed Method

Pipeline Overview





Takeaway: We expect a steady decline in AI related jobs over the next few years. However, we expect an integration of AI tools within non-AI related Computer Science jobs.



Experiments & Results

The result was a model that could reliably forecast the outlook of job postings relating to AI job roles.

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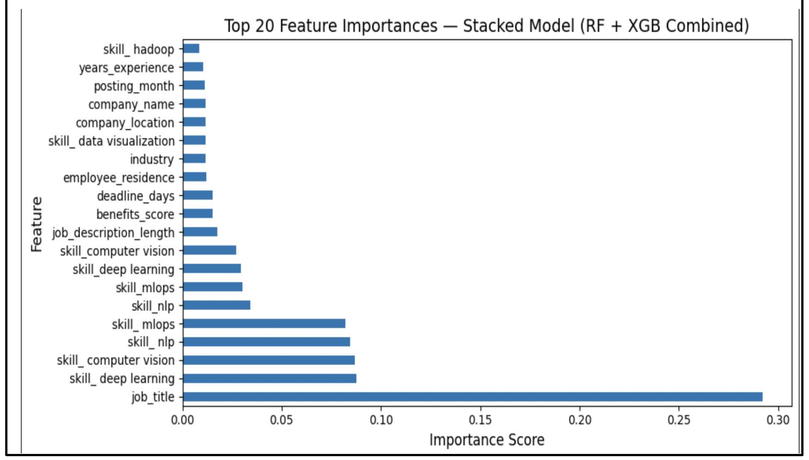
=== STACKED MODEL (Random Forest + XGBoost) ===
Accuracy: 0.9712
              precision    recall  f1-score   support

           0       1.00      0.84      0.91       673
           1       0.97      1.00      0.98      3077

    accuracy                           0.97      3750
   macro avg       0.98      0.92      0.95      3750
weighted avg       0.97      0.97      0.97      3750
```



Conclusion

- Jobs that involve AI-related roles are projected to decline.
- AI-specific roles overall impact will not have a negative effect on non-AI related roles.

References

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[2] GeeksforGeeks. (2025, October 24). *XGBoost*. GeeksforGeeks. https://www.geeksforgeeks.org/machine-learning/xgboost/
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