Airbnb host income calculator

galvanize

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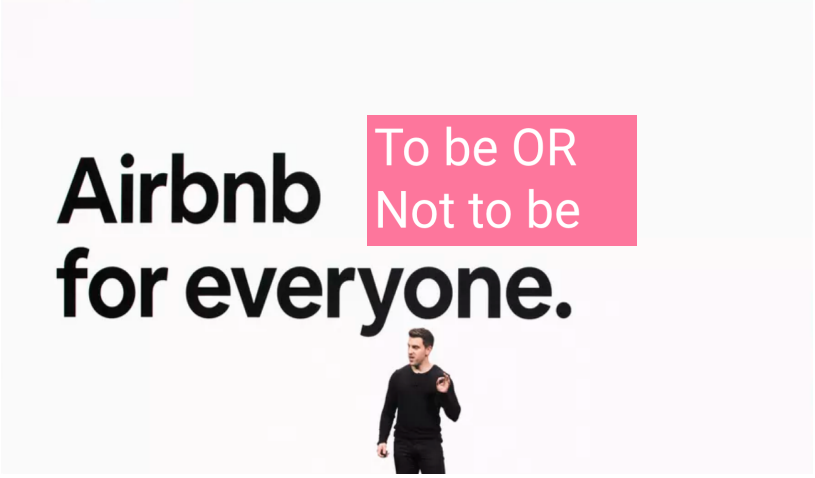
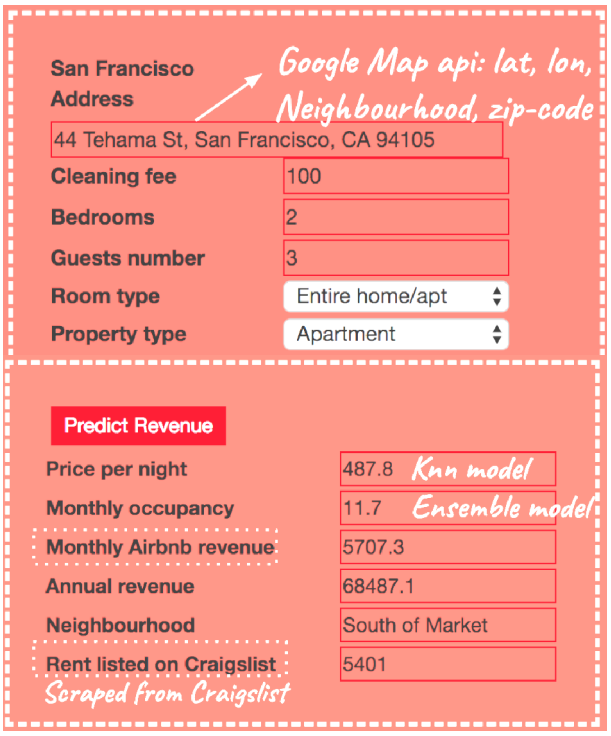
Objective

Built a user-friendly dashboard using Flask to predict monthly income for anyone who wants to estimate their monthly income as an Airbnb host.



Key Business Insights

- Find the fair market price for new users to start with
- Estimate the monthly occupancy rate
- Compute P&L based on long-term rate as opportunity cost
- Identify top revenue generating features
- Identify top popular hosts traits
- Tips for listings to become more inviting



Modeling

- **K nearest neighborhood (price)**
- Ridge
- Random Forest
- Gradient Boosting
- **Ensemble model of Ridge and RF (occupancy)**

Result

- Mean absolute error: about 5 days
  → improved by 3.5 days from baseline model
- Mean root log error: 0.36
  → improved by 0.4 from baseline model

Conclusion

Since the dashboard hosted on EC2 is designed for users who have never been an airbnb host before, any review-related features, which actually contains most of the signal, are not taken into account. But even with six features such as address, number of guests, room type, property type, cleaning fee and number of bedrooms, the ensemble model managed to generate a reasonably good income estimation.

Web Page Link

[http://54.85.70.32:3333/]

Github Link

[https://github.com/gukun770/Airbnb]