

Predicting Pet Adoption Time

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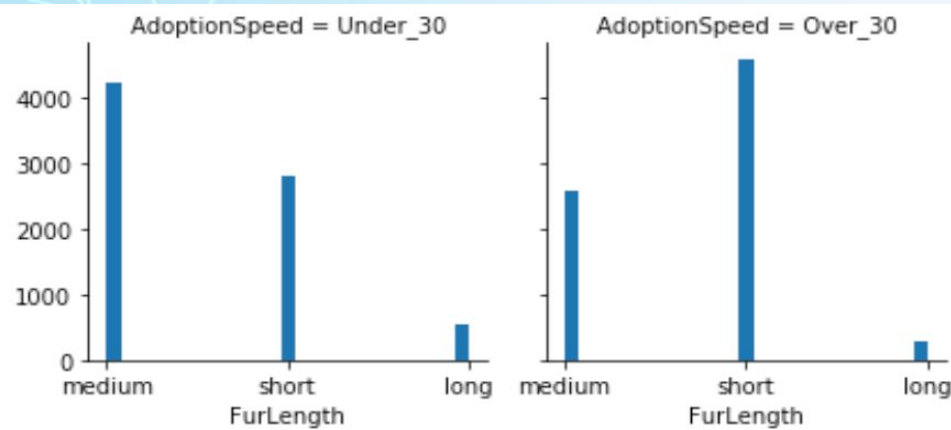
Background Information

- Kaggle Competition
 - Hosted by PetFinder.my
 - <https://www.kaggle.com/c/petfinder-adoption-prediction/data>
- 14,993 pets x 23 features
 - Description
 - Between 50 - 2000 characters
 - Corresponding picture files
- Predicting adoption speed
 - Over/under 30 days

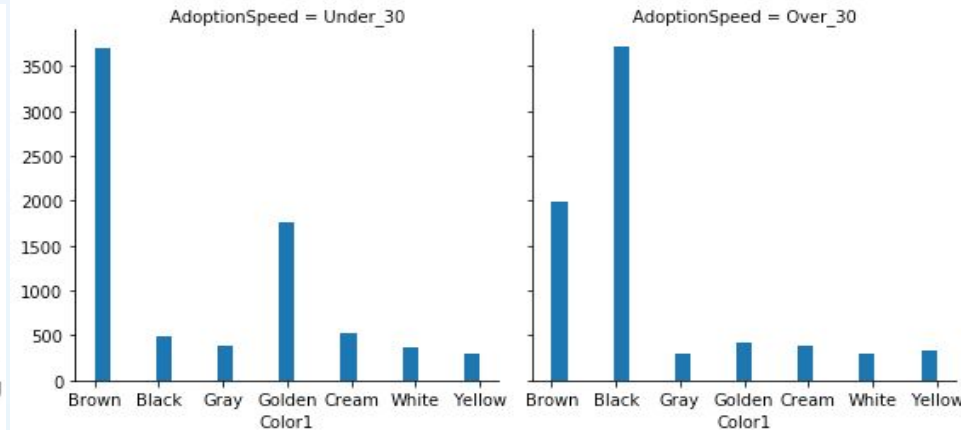
Why it Matters

- Focus on features that matter in adoption speed
- Faster adoption times makes the process more efficient.
 - Reduces overhead
 - Less staff
 - Less space requirement
 - Less food and misc expenditures
 - More pets find homes
- Shelters operating at capacity
 - Euthanasia of animals who are “unadoptable”

Surface Exploratory Data Analysis

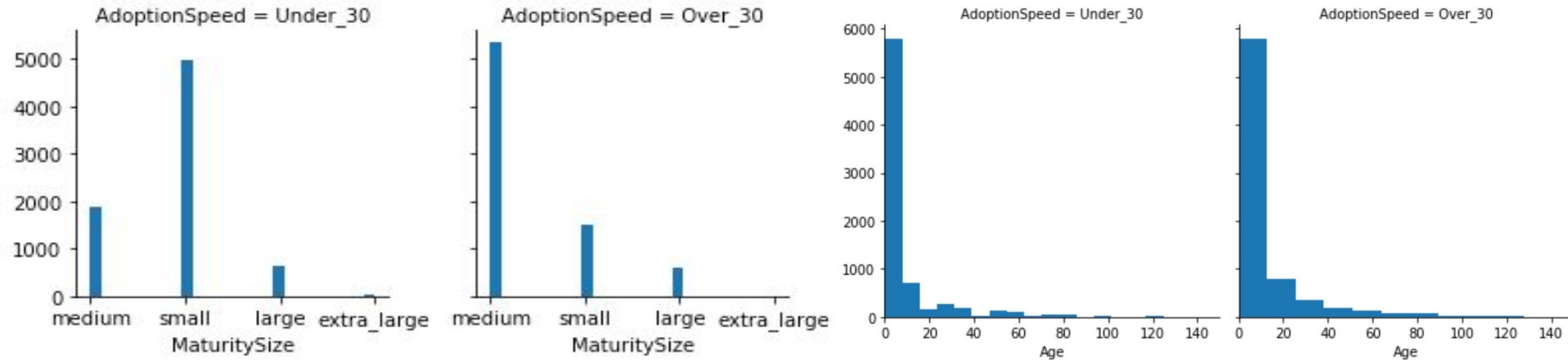


- Pets with medium length hair get adopted quicker
- Short length hair pets take longer



- Black haired pets take longer to place
- Golden and brown haired pets are adopted quicker

Surface EDA Continued

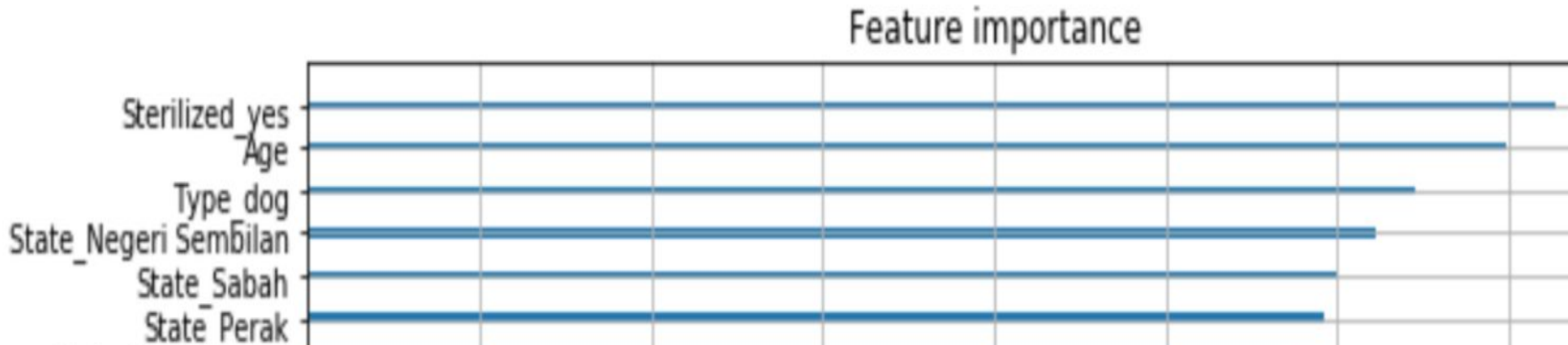


- Smaller pets usually get adopted under 30 days
- Medium pets take longer than 30 days
- Younger pets get adopted more quickly than older pets

Machine Learning Modeling

Accuracy Score:

- XGBoost: 63.25%
- Random Forest: 62.15%
- SVM: 61.83



Recommendations

- Revise the model to include Natural Language Processing and Computer vision
- Shelters should try to improve adoption efforts on:
 - Older pets
 - Short haired pets
 - Looking into successful regional operations