Will you take me home?

Predicting animals finding a home

Andy Wang

Why is it important?

- Limited resources

- Goal:

  - Predict finding a home (adoption and return to owner)
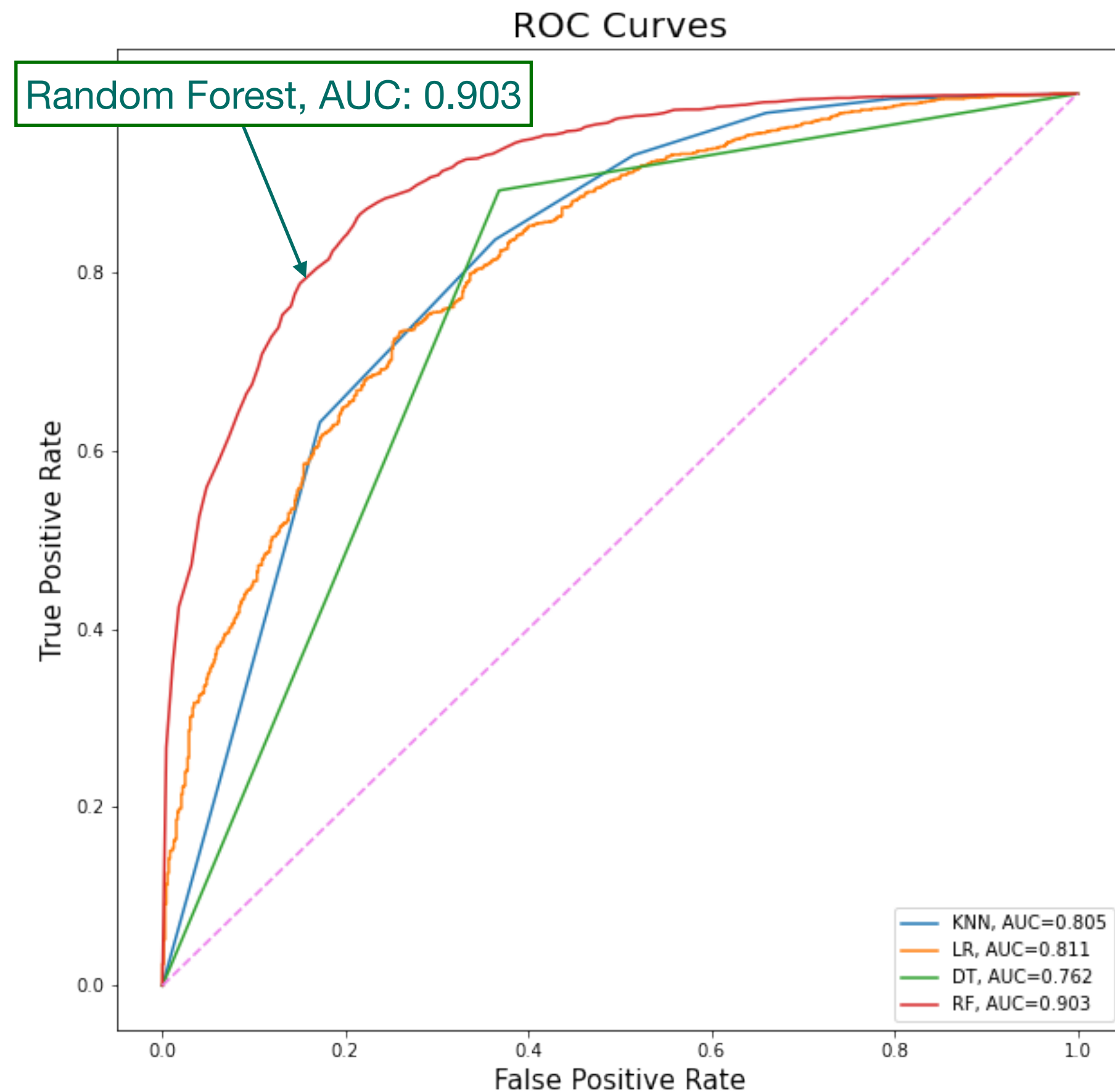
  - Feature importance

Data

- Data from the Sonoma County, CA.

- 15,281 observations

- Features:

  - Day of week

  - Duration in shelter

  - Animal info (type, age, etc)

Methodology

- F1

  – Balanced precision and recall

- ROC AUC for model selection

  – Better distinguishes positive and negative classes

Methodology

- Tune with GridSearchCV
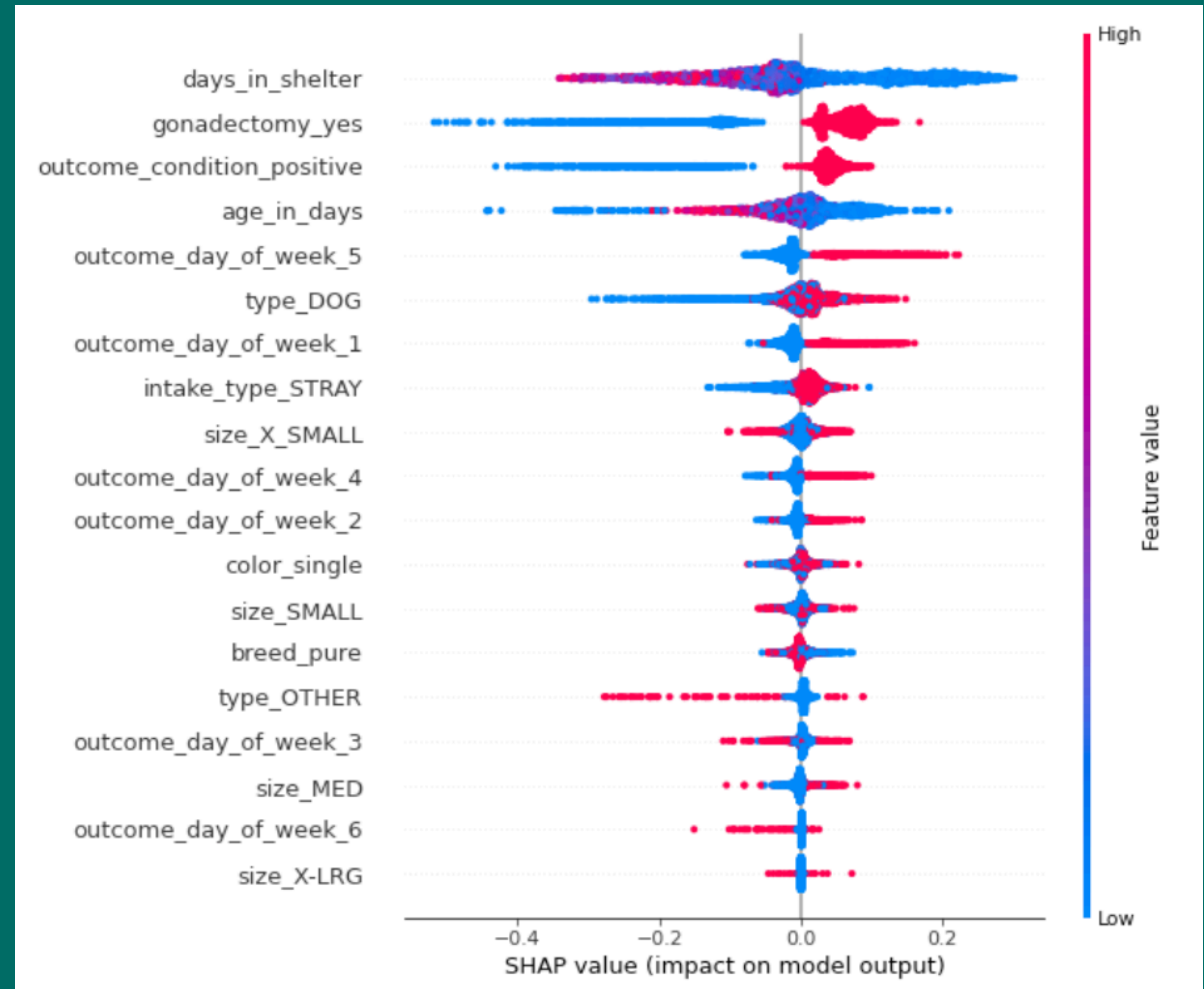
Random Forest Final Model

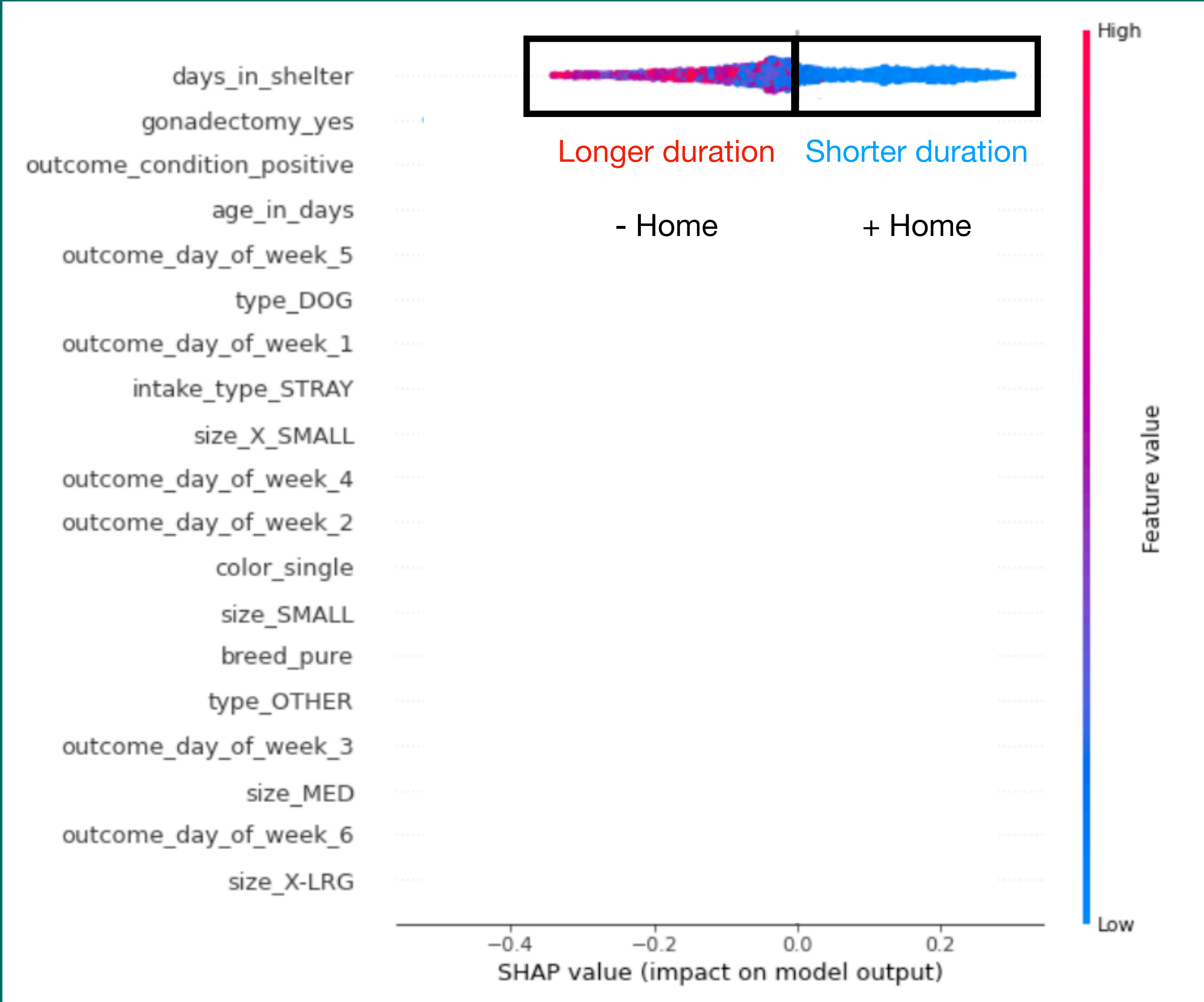|	Validation	Test
F1	0.915	0.915
AUC	0.906	0.918

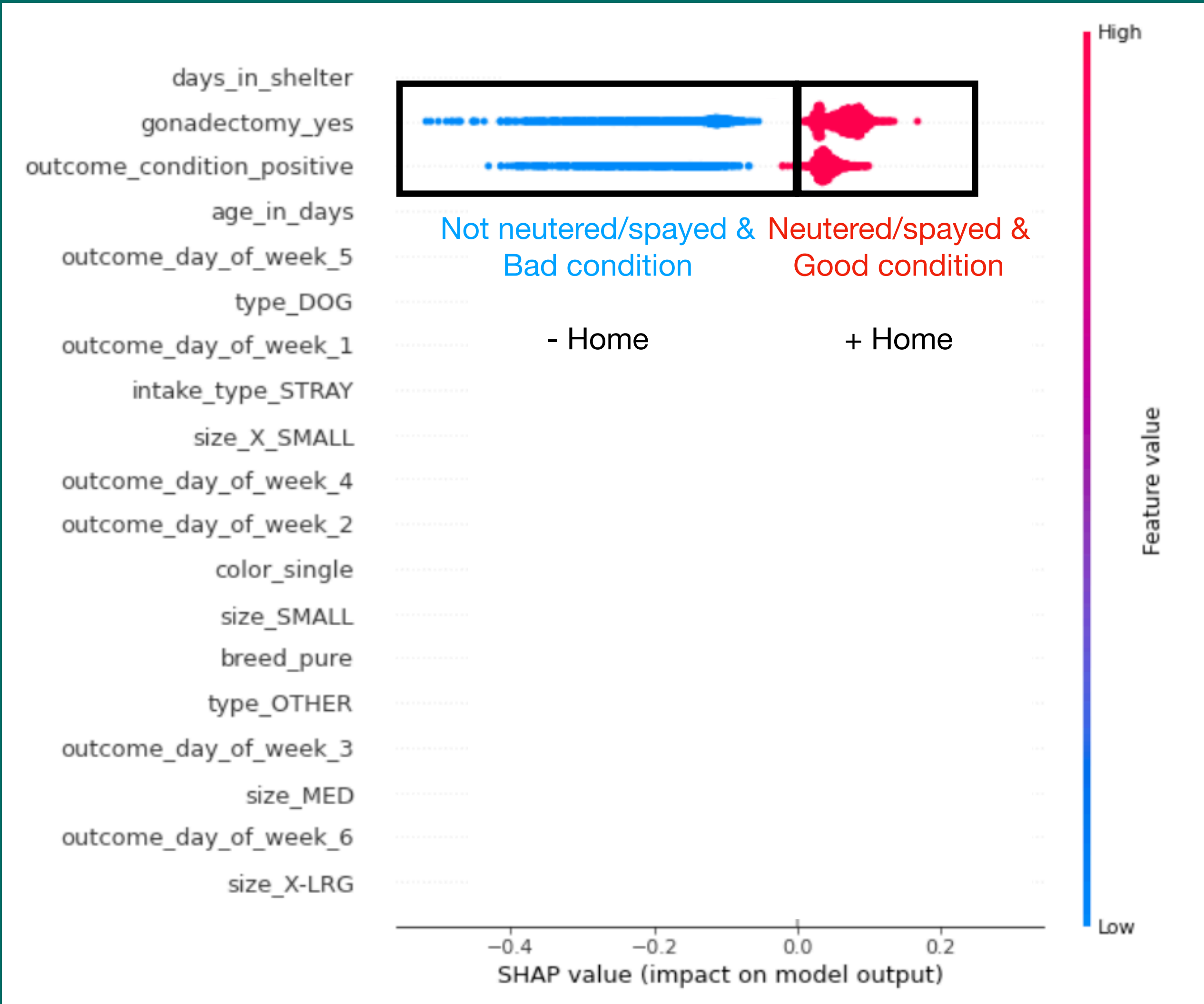# Feature Importance

Features:

- Days in shelter

- Type of animal

- Intake type

- Outcome condition

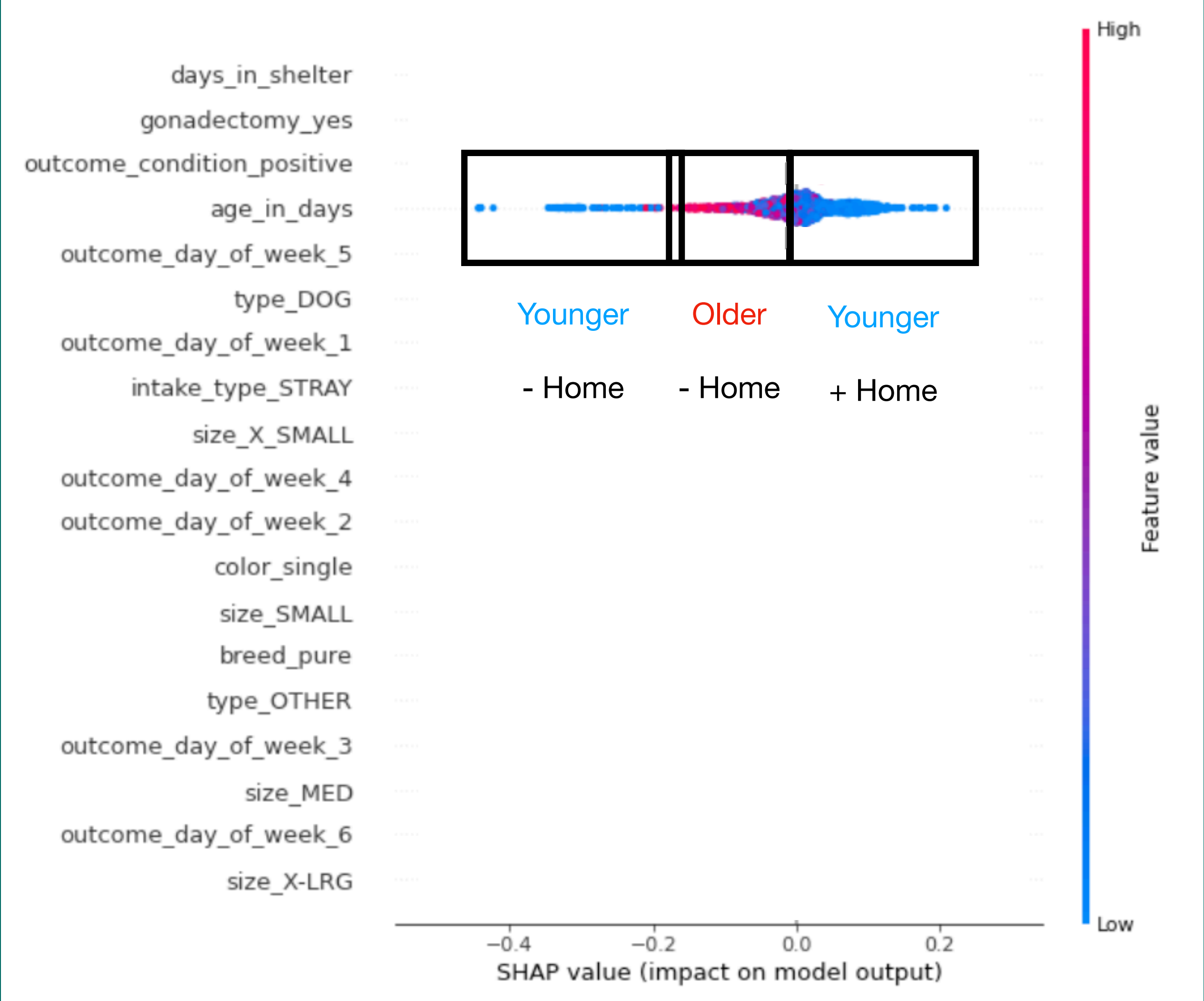- Outcome day of week

- Characteristics of animals
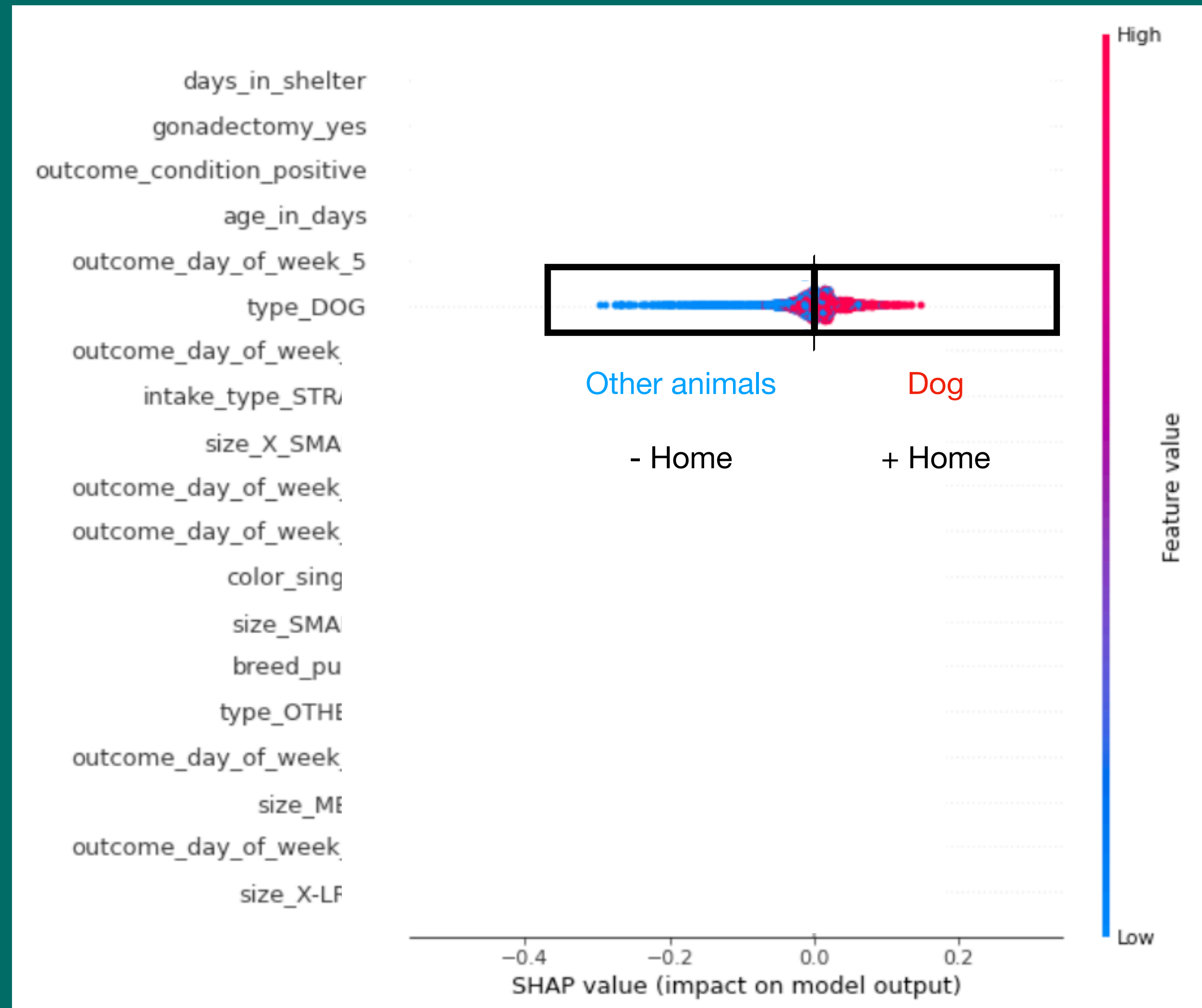
Feature Importance

Feature Importance
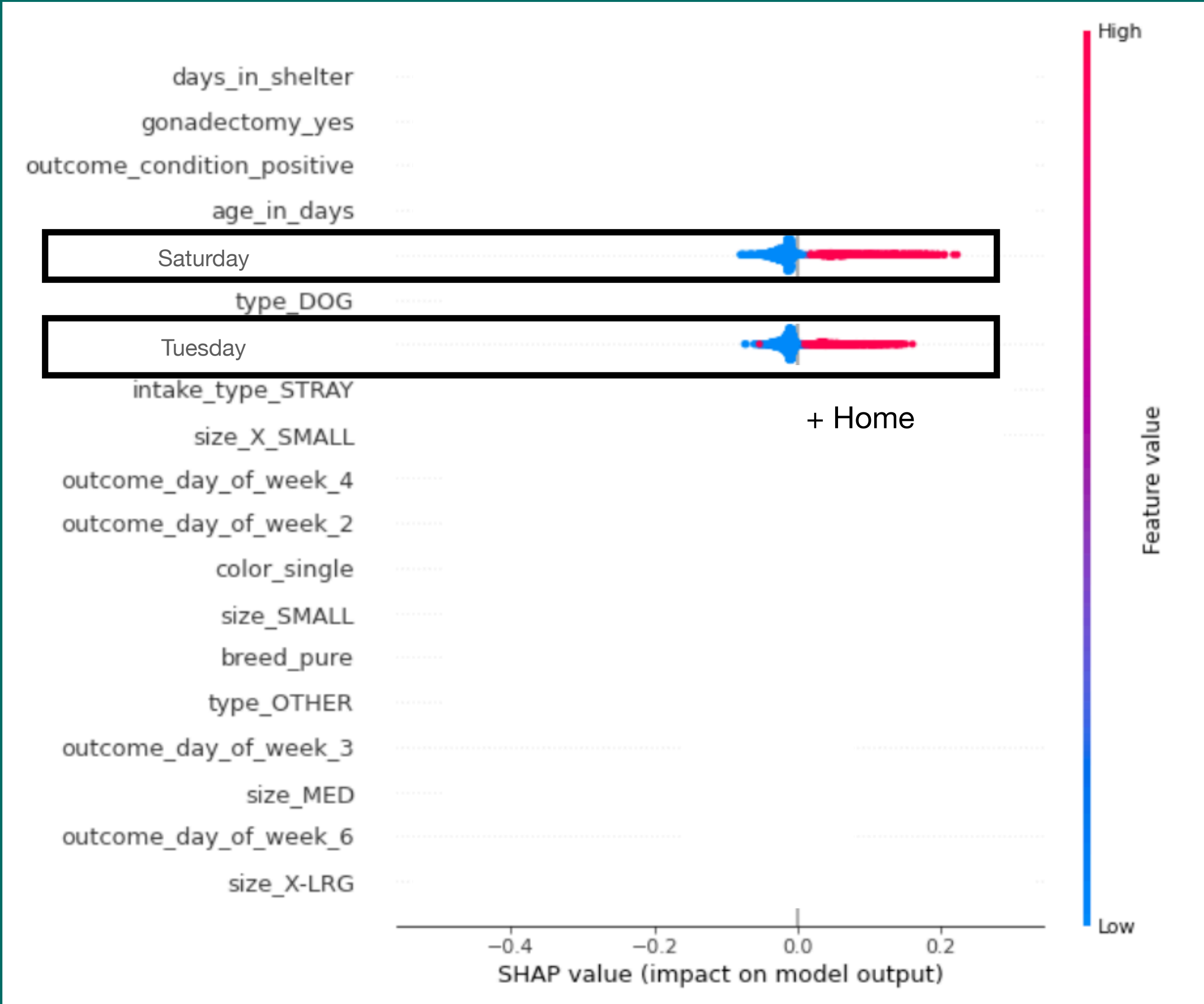
Feature Importance
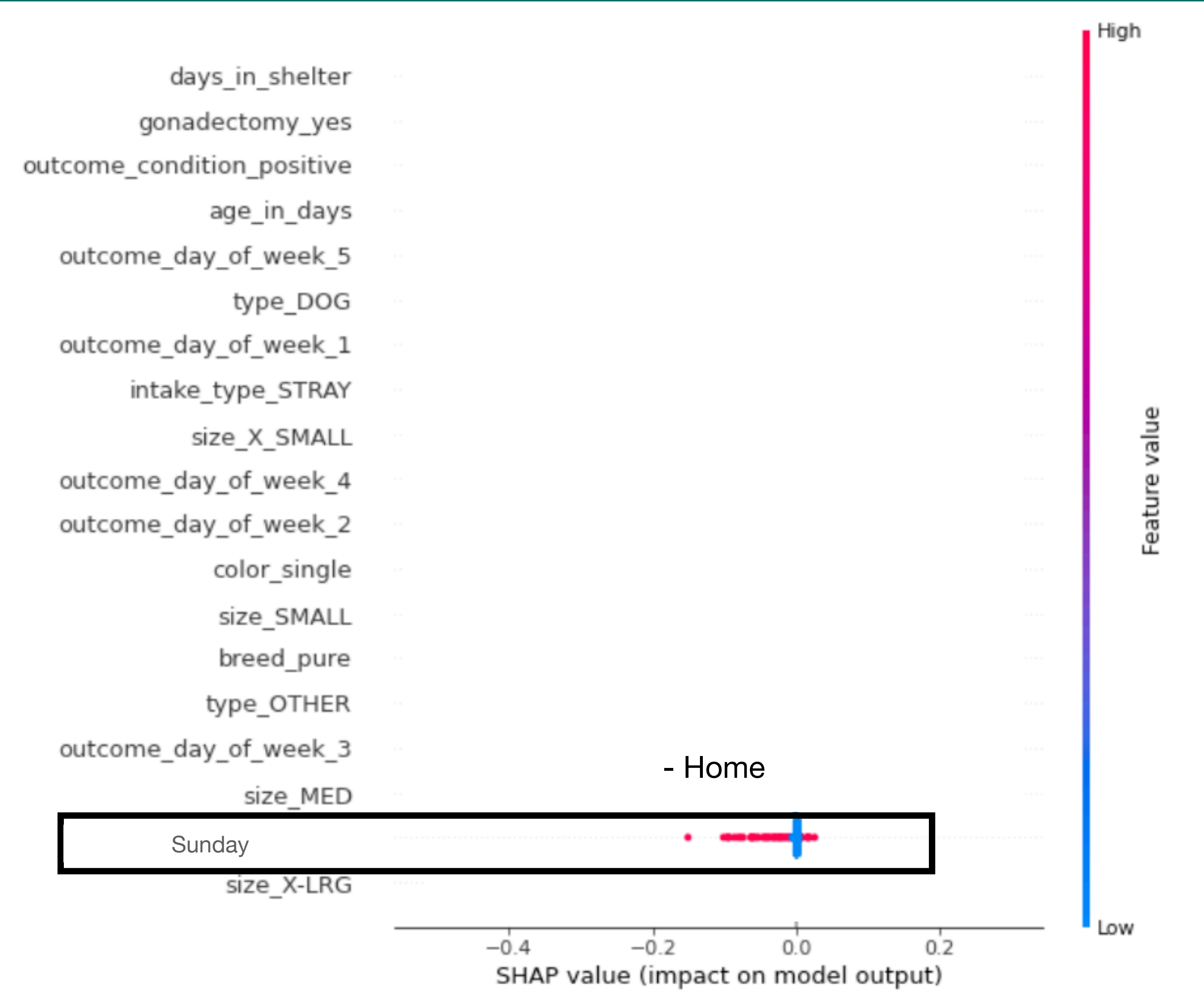
Feature Importance

Feature Importance

Feature Importance

Conclusion

- Found out reasons for the longer duration stay

- Animals' condition is important

- Compare among Tuesday/Saturday and Sunday

Thank you

Appendix

Baseline (LR) vs Final Model (RF)

	Baseline	Final
F1	0.871	0.915
AUC	0.815	0.918

Appendix

Final Model (RF) Confusion Matrix