Animal shelter outcomes

A Classification Problem

Objective

- To predict outcomes for shelter animals based on their intake information and known characteristics
- This can help us identify animals at risk and better react to their needs to improve their outcome

The Data

- Using data from the “Austin Animal Center Shelter Intakes and Outcomes” set on Kaggle
- Data set consists of 41 columns, with a history of almost 80K animals
- NOT all animals are adoptable - includes some wild caught animals such as bats, etc
- Austin Animal Shelter also participates in animal health initiatives such as spay/neuter and release

Possible Outcomes

- Adoption: Animal adopted
- Death: Animal dies in shelter possession
- Missing: Animal goes missing
- Transfer: Transferred to partner
- Euthanasia: Animal euthanised
- Disposal: Animal disposed
- Relocate: Animal re-homed
- Return to Owner: Animal returned to owner
- “RTO-Adopt”: Owner surrender, re-adopted by prior owner

Methods

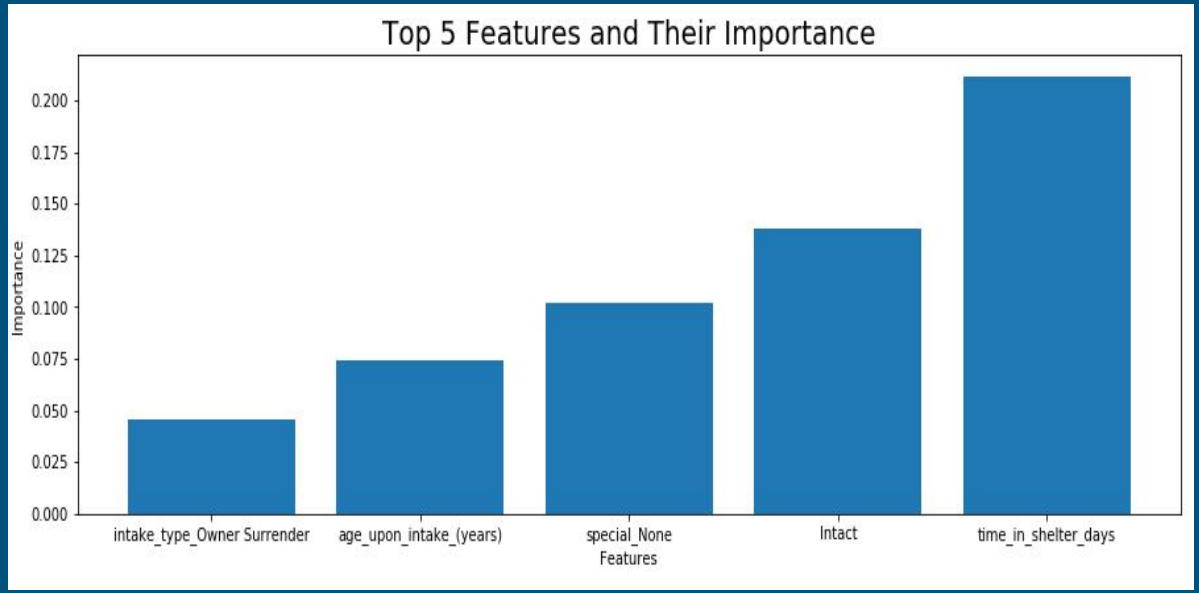
- Removed features that provided details about the outcome (e.g. date, time, month, year, etc)
- Removed features that were arbitrary or unique (Assigned ID number, address where found, day of week of animal intake, etc)
- Created a feature to track whether the animal is spayed/neutered
- Created a feature to track whether the animal is deemed suffering or a risk

82%

Overall Model Accuracy

Most Useful Features

- Days in shelter
- Spayed/Neutered
- Special Condition
- Age upon intake (years)
- Owner Surrender




Confusion Matrix of Animal Outcomes
Adoption
Died
Disposal
Euthanasia
Missing
Relocate
Return to Owner
Rto-Adopt
Transfer
1.0
0.8
0.6
0.4
0.2
0.0
Model can't predict these accurately