Dog Adoption

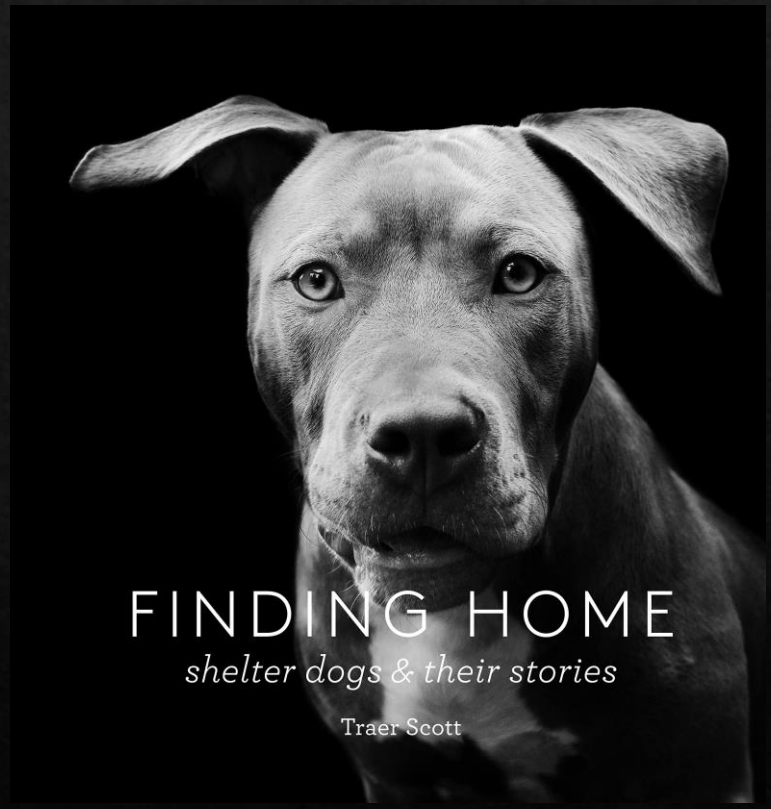
Autumn Salsberry

Capstone

BrainStation

Introduction

- Problem Statement:
  - Use image predict adoptability
- Value Added:
  - Resources saved
    - Frees up kennels
    - Reduce human labor
  - Euthanasia prevention



Austin Texas Animal Shelter Dataset

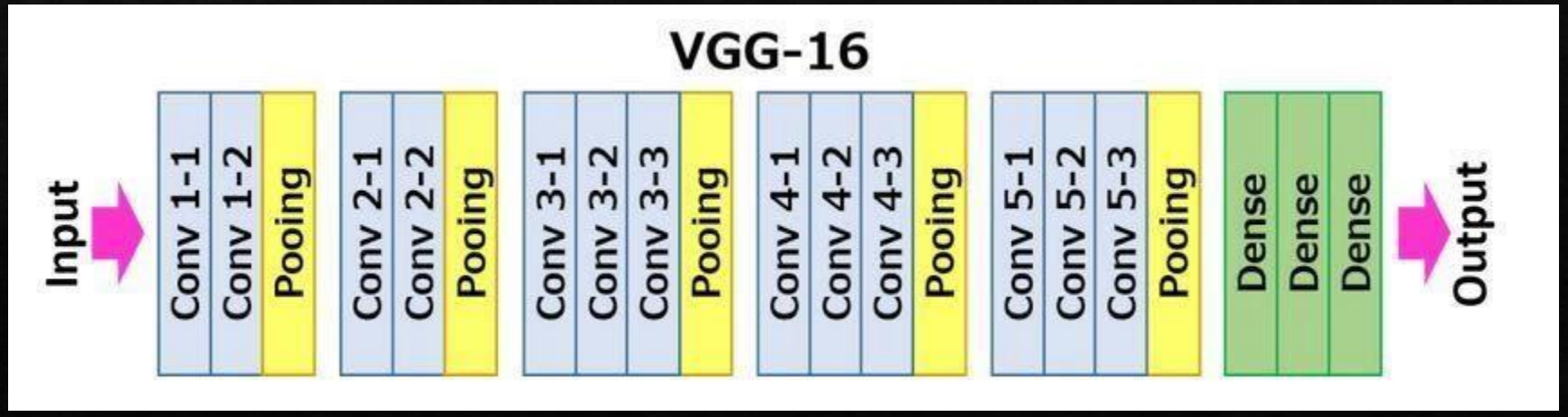
- One row is one dog
- Target – adoption status
- Columns – intake/outcome conditions
  - dog description (age, gender, color, breed, etc.)
- Features Engineering – OneHotEncoded breed and color

Stanford Dog Dataset

- One image is one dog
- 120 breeds
- Varying angles, surroundings and objects in frame
- Train, val, test – (0.4, 0.2, 0.4)
- Stored on local computer

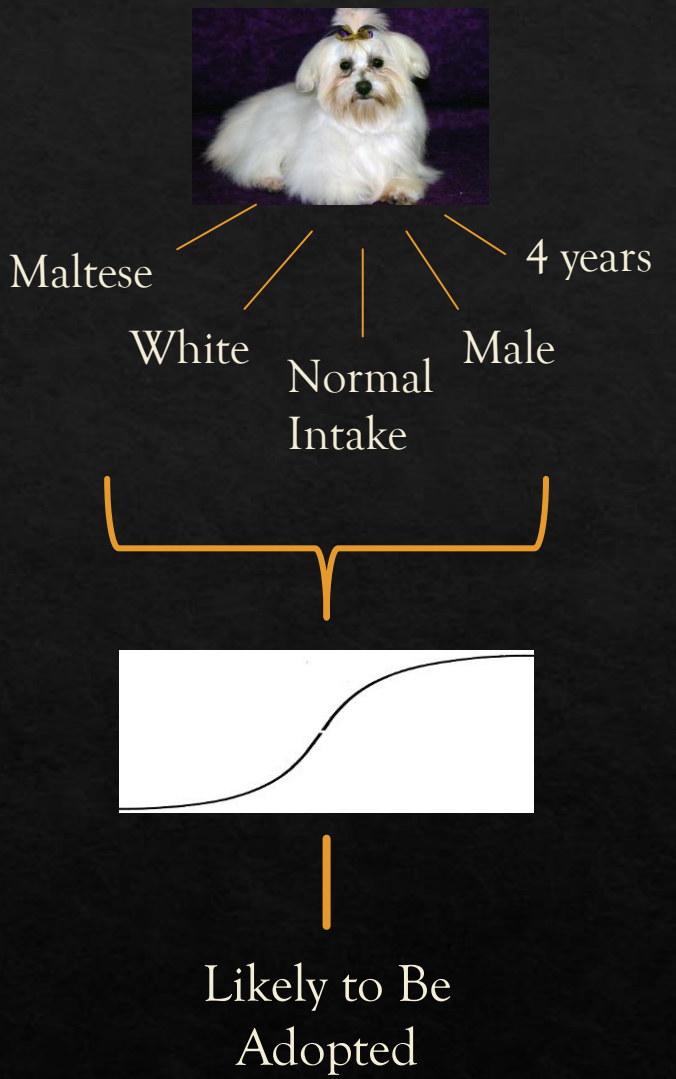
Modeling (1st half)

- Resized Images
- Matrix of image arrays
- Transfer Learning
- 12 Times Increase on Base Rate

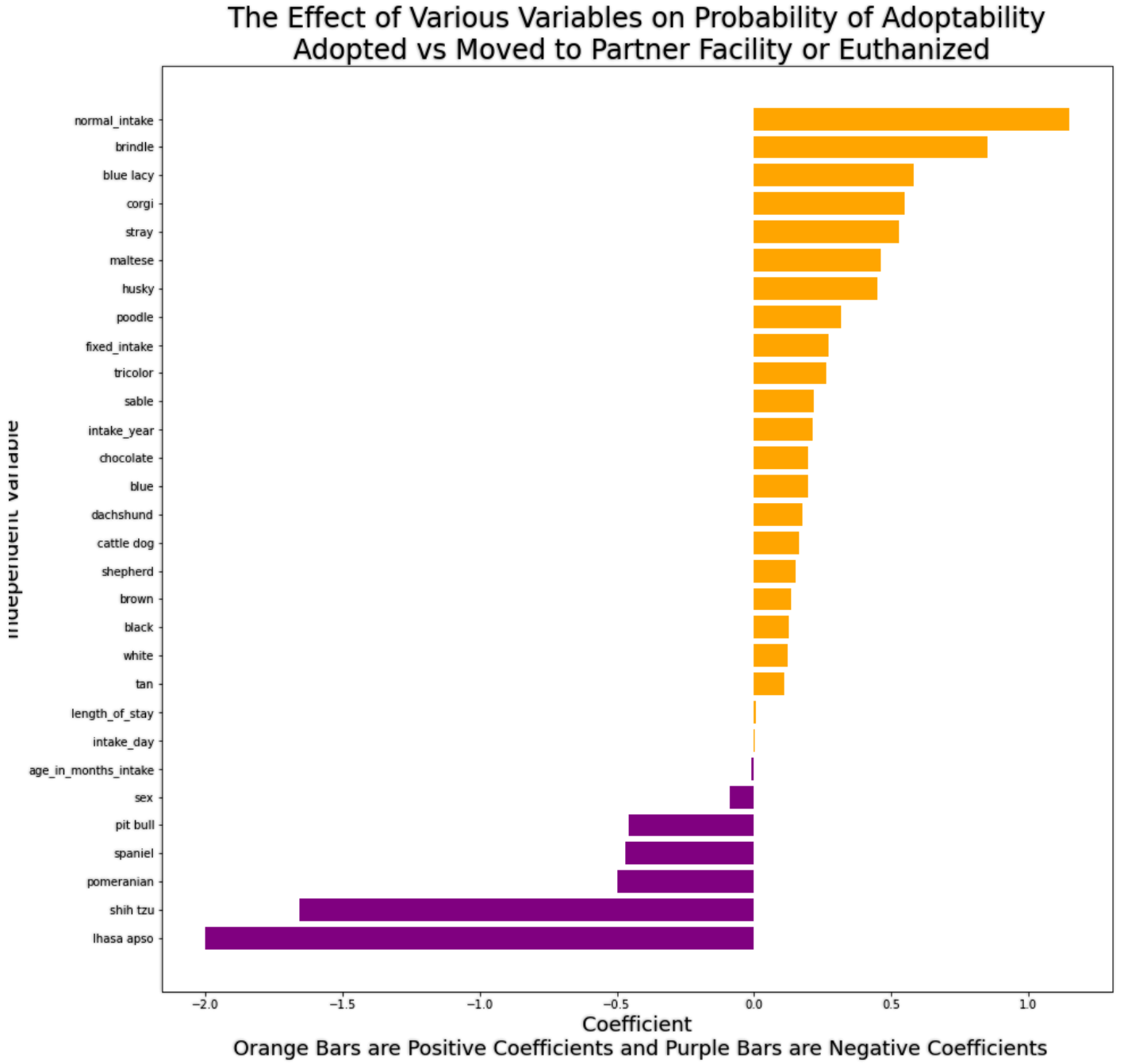


Modeling (2nd half)

- Models:
  - ★ Logreg
  - ★ Random Forest
  - } 19% improvement
  - Neural Networks
  - Boosting
  - } future focus
- Actionable insights:
  - Normal intake 3x more adoptable
  - Brindle coat 2x more adoptable
  - Lhasa Apso 7x less adoptable



Logistic Regression Model Coefficients



What's Next?

- Improve Image Modeling
  - Recognize Breed
  - Recognize Color
  - More Image Needed
- Optimize Boosting Models
- Check Generalizability of Model