Group 7

IDENTIFICATION OF CUSHING'S SYNDROME IN CANINES

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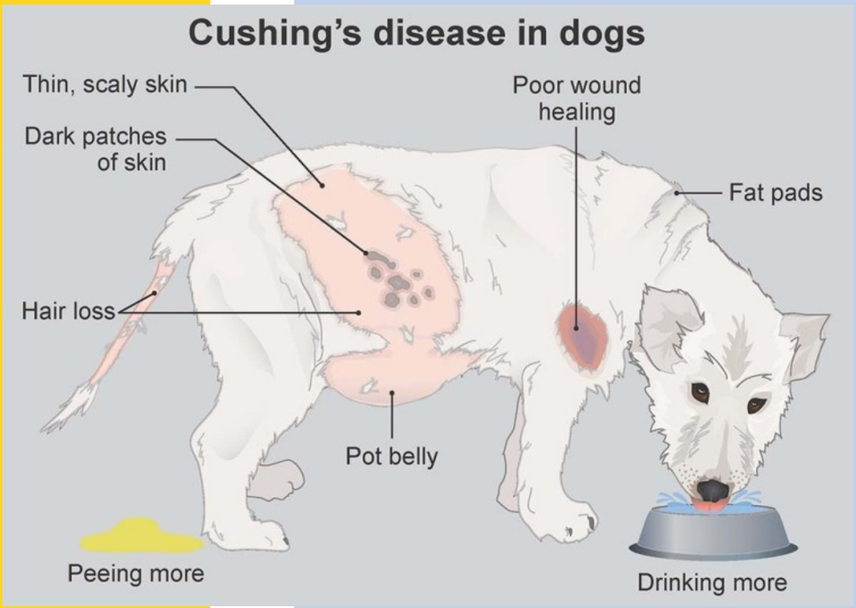
PROJECT BACKROUND

Cushing's Syndrome

- Adrenal glands overproduce certain hormones.
- Disease develops slowly, early signs less noticeable

SYMPTOMS:

- Enlargement of the abdomen
- Hair loss, obesity
- Increase urination, panting etc



PROJECT OBJECTIVE

Cushing's Syndrome

To develop a diagnostic tool to predict early detection for the syndrome

Model Aim Accuracy: 70-75%

Model used: **Logistic Regression Model**

DATA SOURCE

Main Source

JOURNAL OF VETERINARY INTERNAL MEDICINE

Excel Resource:
https://rvc-repository.worktribe.com/output/1378204

Data Source

Excel Data

Data Size

1161 records

547dogs with syndromes

541dogs as controls

Phenotypic Traits

Sex

Breed

Clinical Data

Neuter Status

Weight

Weight Change

Symptoms: Binary values (True/False)

Vomiting, Panting, Lethargy etc.

DATA PREPROCESSING

1. Feature Engineering
2. Columns with NA/Missing Values
3. Scaling

DATA PREPROCESSING

1

FEATURE ENGINEERING

Create an additional column - Age

BIRTH DATE
(DATE TYPE)

DATE SUSPECTED
(DATE TYPE)

AGE (INTEGER TYPE)

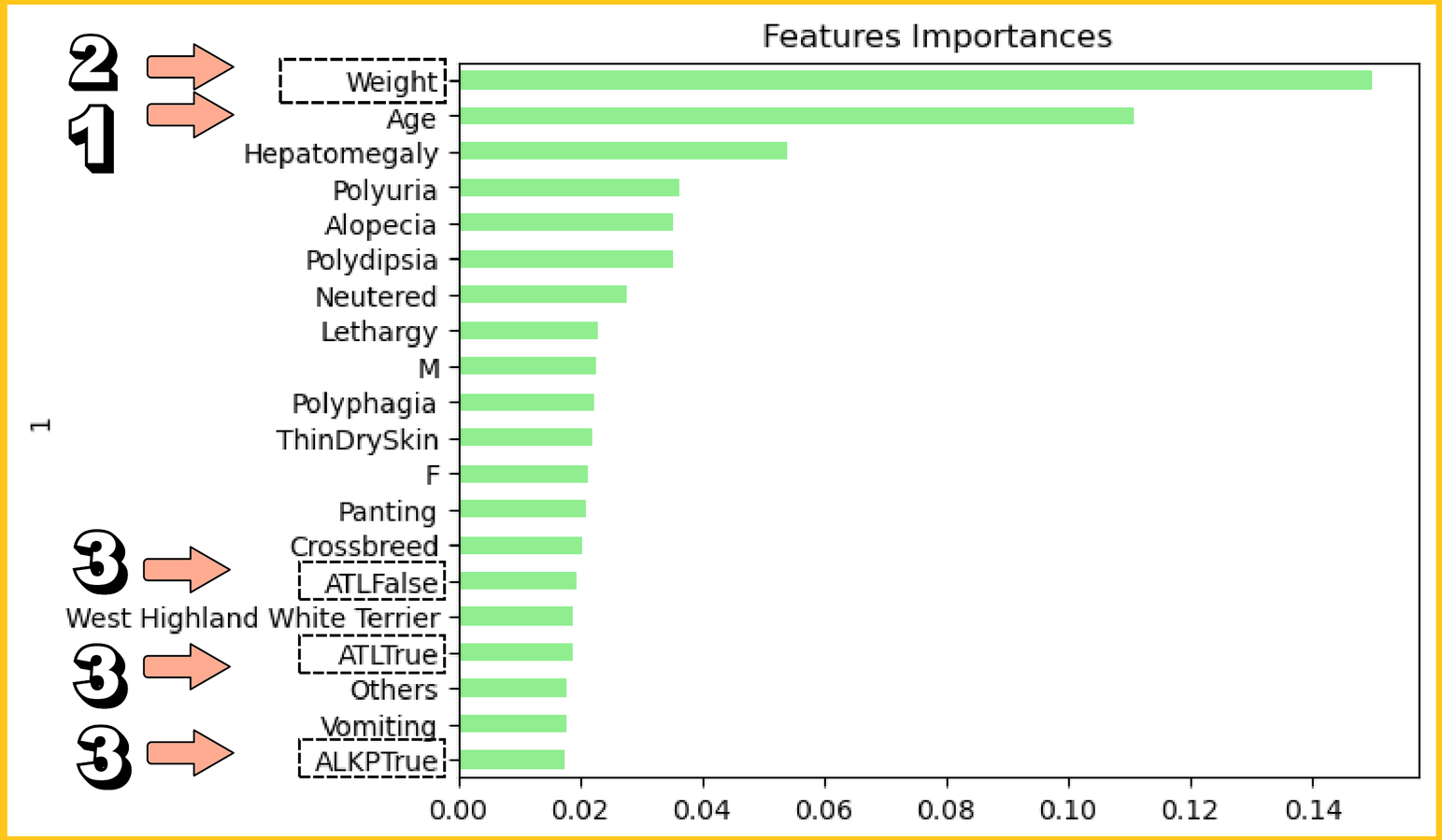
DATA PREPROCESSING

2 DELETE COLUMNS WITH NA VALUES

Column names	No. of NA data points	% of NA data points
Weight at suspected	127	10.9
Increased ALKP_19	504	43.4
Increased ALT/GGT/AST_20	598	51.5
USG <1.20_21	706	60.8
Proteinuria_22	745	64.1
Heart rate_23	746	64.2
Temperature_24	819	70.5

FEATURE IMPORTANCE

3 CHECK FEATURE IMPORTANCE
Using Random Forests Method



MODEL ACCURACY

Baseline: 75%

Achieved: 78%

Classification report

	precision	recall	f1-score	support
No Disease (0)	0.79	0.76	**0.78**	106.00
Disease (1)	0.76	0.79	**0.78**	101.00
accuracy	0.78	0.78	**0.78**	0.78

DEMONSTRATION

LIMITATIONS

- Understanding the medical context
- Lack of numerical data
- Lack of data access

IMPROVEMENTS

- Flask connection
- Predictive accuracy
- Breed options list
- Scaled Weight by Breed

CONCLUSION