

Chris Banks

Research Fellow / Core Scientist
Roslin Institute
Royal (Dick) School of Veterinary Studies
University of Edinburgh

Two machine learning projects in the
veterinary world...

Bovine TB skin test augmentation

- The routinely used skin test for Bovine Tuberculosis has low sensitivity.
- Test threshold lowered in obvious high-risk situations.
- But multiple complex factors can contribute to TB risk.

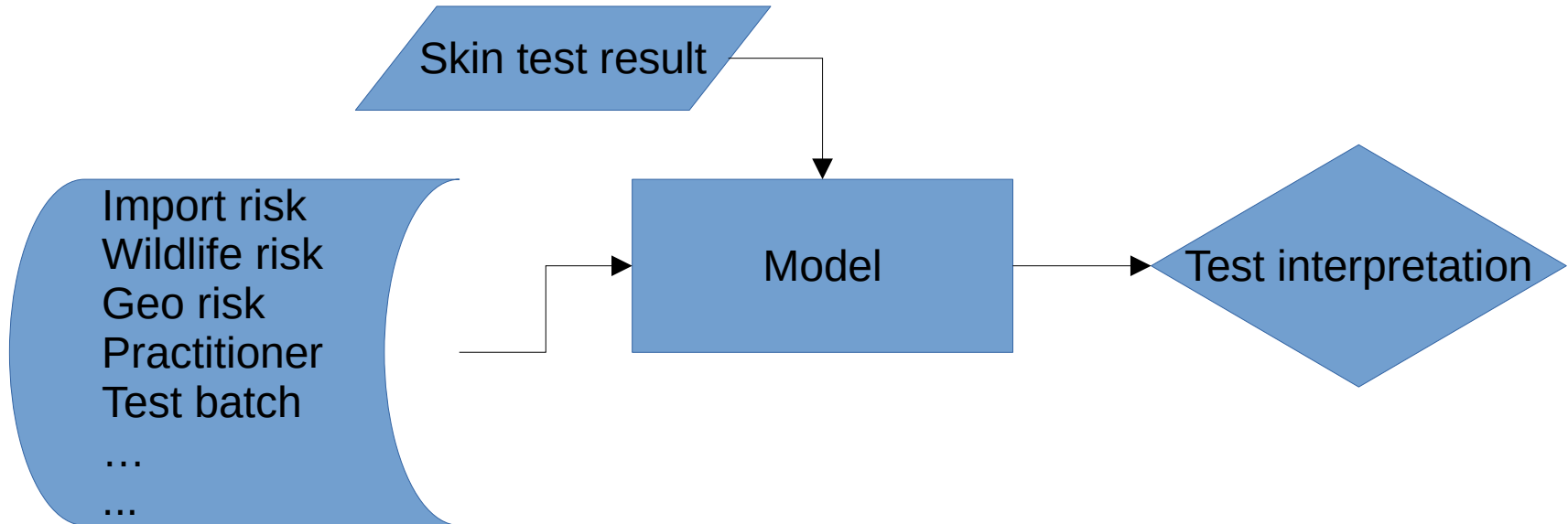


Image classification for canine otitis media

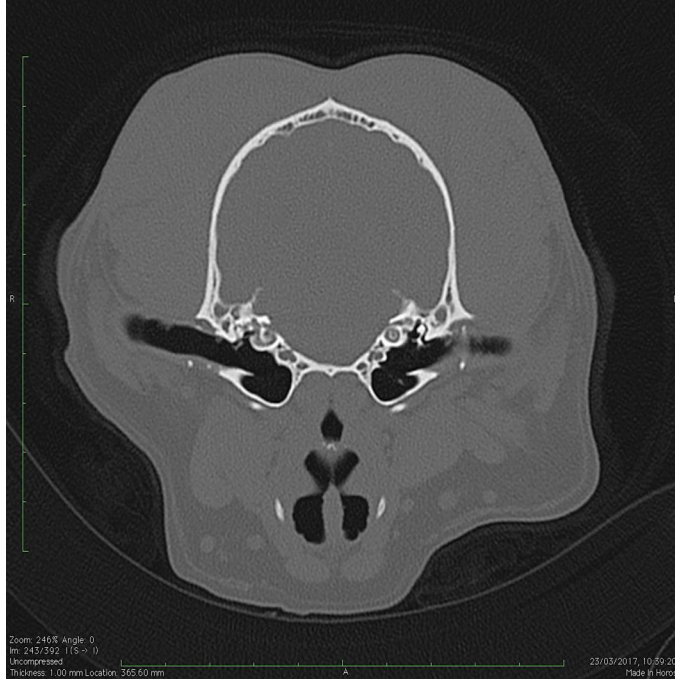


Image Set and Convolutional Neural Network

- Training set:
 - 446 “normal” images
 - 107 “positive” images
 - (+augmented)
- Validation set:
 - ~20% of full dataset reserved (randomly selected)
 - 78 “normal” images
 - 28 “positive” images
- A simple “off the shelf” network for small image sets.
- 3 Convolutional layers, 2 fully connected layers.
- Dropout and Training set augmentation
- Trained from scratch on a single consumer GPU.
- Using Keras/Tensorflow.

Results

- >90% accuracy on validation
 - (before signs of overfitting)
- Very promising for a simple model and small dataset!

