The background features a light cream color with various blue decorative elements. These include solid circles of different sizes, some with concentric rings, and clusters of small dots. Some circles have a fine-lined texture. The elements are scattered across the page, framing the central text.

The Application of a Smart Camera Using Artificial Intelligence (AI) in Animal Healthcare

By Cassandra Soon

Objective

- To use a smart camera to provide tools for animal care through the mobile identification of pathogens and the detection of toxic plants
- The development of AI models that can classify pathogens and identify toxic plants harmful to animals and livestock
- The AI models run on a smart camera, which also has a microscope lens attachment
- This could be an inexpensive education tool that can also be used for field applications

Plant Types

- Castor Bean - Toxic to All
- Common Cocklebur - Toxic to All
- Japanese Yew - Toxic to All
- Jimsonweed - Toxic to All
- Oleander - Toxic to All
- Water Hemlock - Toxic to Cattle
- Groundsel - Toxic to All Grazing
- Whitesnake root - Toxic to All Grazing
- Wild Black Cherry - Toxic to All Ruminants
- Easter Lilly - Toxic to Cats
- Redroot Pigweed - Toxic to Cattle/Swine
- Field Horsetail Scouringrush - Toxic to Horses
- Rosary Pea - Toxic to Pets

Pathogen Types



- Aspergillus- nasal aspergillosis
- Escherichia coli- UTIs and sepsis
- Bacillus Subtilis- positive probiotic in gut health

Models

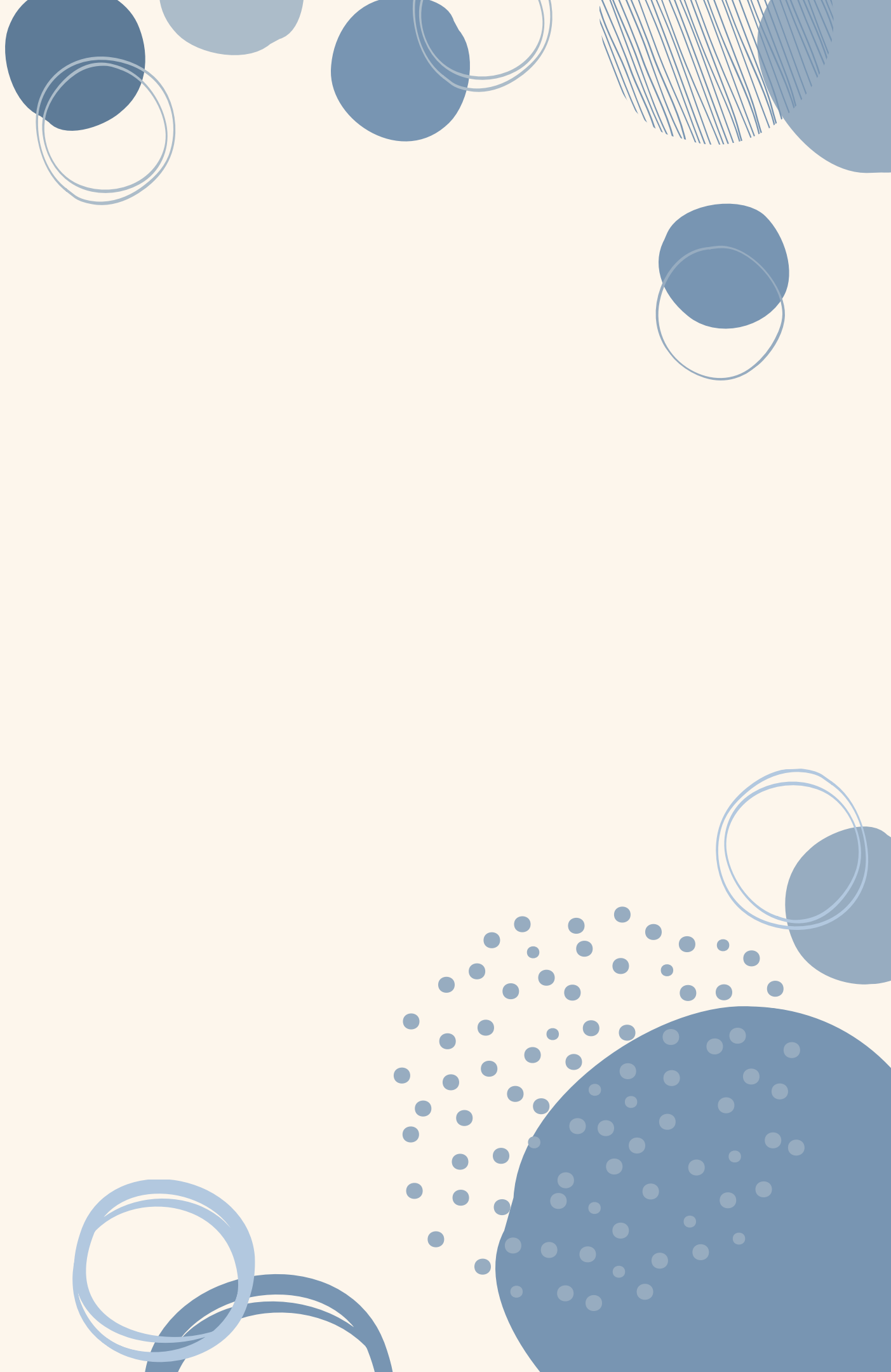
- Camera type
 - DFROBOT HUSKYLENS Camera V2
- Label Software
 - Label-Studio
- Pre Existing Model
 - YOLO V8 Ultralytics.com

Pathogen Confusion Matrix

Predicted

Aspergillus	100%	0%	0%	0%
Bacillus Subtilis	0%	51%	0%	53%
E. Coli	0%	0%	57%	47%
Background	0%	49%	43%	0%
	Aspergillus	Bacillus Subtilis	E. Coli	Background

True



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Thank You!