FLOX

Who are we?

FLOX *is a UK-based agri-tech startup with initial applications in the broiler (chickens raised for meat) industry. Our formula is: off-the-shelf hardware + machine vision & AI + 24/7 alerts and insights = better bird welfare and performance.*

Context and scope of work

Increased demand for poultry has meant UK farmers are building nearer residential locations and SSSI ecosystems; particularly the case in two key regions, Hereford and Shropshire. Limited understanding and no related system of measurement in terms of 1) how excess ammonia is produced (e.g. via subpar litter management inside the shed, or ventilation issues) and 2) where it goes when it leaves the shed; is problematic.
In this project, we'll deploy cameras and ammonia sensors inside and outside of poultry sheds. We'll combine visual, environmental and meteorological data gathered from a wide variety of connected sources, and overlaid with algorithms, to provide farmers with actionable insights they can use to 1) understand and reduce ammonia emissions, and 2) improve bird welfare and profitability.
Insights and decision-support data will be made available to farmers, and relevant supply chain stakeholders, via a simple BI platform.

How can you help?

Specific tasks we'd like your help with include:

Chicken tracking: *Use existing visual datasets for tracking of individual birds and generating insights about movements and behaviour*

Chicken counting: *Use full-coverage stitched images from our network of cameras (10 per shed) to count chickens with a high degree of precision*

Pose estimation: *Looking at the movements of chicken skeletons, build a model to help determine/predict bird behaviour (e.g. feeding/drinking or gait analysis)*

Event (and anomaly) detection: *Create notifications for farmers in response to predefined events (e.g. human in shed) and anomalies (e.g wild birds in shed)*

Activity-promoting light system: *Build a simple, directed system to encourage more bird movement for better health and welfare*

Farmer-facing recommendations: *Build models from a variety of labelled data (temperature, activity, growth, feed additives…) to recommend management actions to farmers*

Record sound: *Build a system to record chicken sounds across an entire shed*

Audio-based weighing: *Use labelled data to estimate chicken weights by sound*

Determine camera positions from imagery: *Build an estimator using incomplete visual data to infer camera positions to help build accurate shed models*

Re-calibration of camera positions (while operational): *Compensate for errors in positioning e.g from temperature-based expansion or any damage/movement*