Xiao (Maxwell) Yang

Phone: 706-254-4353 | **Email:** xy50573@gmail.com | **Linkedin:** /in/xiao-yang-phd/

SUMMARY

Data Scientist with 3+ years of experience in Healthcare and Agriculture, and expertise in applying Statistical Analysis and Machine Learning Models for Data-Driven Innovation, Computer Vision, Anomaly Detection, Risk Forecasting, Time Series, and Decision Making.

SKILLS

Python, NumPy, Pandas, Scikit-learn, Matplotlib, Seaborn, SciPy, Flask, SHAP, Keras, Tensorflow, PyTorch, Oracle cloud, Google cloud Platform, Jupyter Notebook, GitHub, SQL, Tableau

EDUCATION

University of Georgia — Athens, GA
PhD in Poultry Science — 08/2021 - 08/2024

EXPERIENCE

University of Georgia — Athens, GA

Data Scientist/Graduate Research Assistant — 08/2021 - Present

Chicken Weight Predictor

- To enhance growth rates and maximize feed efficiency, engineering a Chicken Weight Predictor employing Random Forest (RF) to calculate weight from chicken image pixel counts.
- Integrated a model combining segment anything model (SAM) with RF to automatically delineate individual chickens and calculate their total pixels, enhancing accuracy by 5% compared to traditional methods.
- Constructed a chicken weight predictor achieving a correlation coefficient of 0.92, and augmented the model's accuracy using thermal imaging to capture key indicators of chicken weight.
- The application of the model led to a 5% reduction in feeding costs and ensured a more uniform chicken size, which commanded a 3% higher profit.

Chicken Health Monitor

- To optimize farm productivity and profitability, developing a Chicken Health Monitor leveraging machine learning to detect poultry health anomalies based on behavioral and physiological features.
  Implemented the 'You Only Look Once' (YOLO) convolutional neural network (CNN) to identify critical poultry behaviors like pecking, illness, and mislaying, streamlining health checks and reducing farm labor by 20%, saving $100,000 annually.
  Developed a YOLO-Hens classifier trained on images of unhealthy chickens, conducted hyperparameter tuning to attain a precision score of 0.96. Improved classifier efficiency by incorporating a Ghost module that streamlines feature map generation in a cost-effective manner. (Published at Animals 2022, 12 (15), 1983)
  Halved chicken mortality and enhanced welfare, coupled with a 33% reduction in labor, led to a 20% increase in cage-free chicken rearing capacity, boosting profits by $15,000 for a 25,000-chicken farm.

PROJECTS

Political Funding Forecasting — 08/2023 - 02/2024

- To aid political organizations in budget planning for fundraising, developing a time series-based funding trend model using 2016-2022 election data from the Federal Election Commission.
- Organized data into yearly, monthly, and weekly segments, focusing on weekly trends and removing NaN values. Tested models including Linear Regression, ARIMA, and SARIMA, achieving a notable R2 score of 36.7% with Linear Regression.
- Wrapped the best-performing model at a Flask App and developed it on GCP; interpreted the default forecasting of each individual organization with SHAP values.