



Project Overview

A few large corporations dominate the U.S. meat-packing industry, potentially having a negative impact on the price that small farmers charge for their animals. Rural Advancement Foundation International (RAFI) advocates for legislation to protect small farmers from exploitation by large corporations. The DSI team worked with RAFI on poultry barn geo-identification, and created a more accurate dashboard to display livestock concentrations.

The team worked to enhance an existing computer vision model that identifies poultry barns from aerial photography.



A high number of false positives was observed, as shown in the figure. The team added geospatial datasets to our rule-based filters including mountains, roads, rails, airports and parks, eliminating about $\frac{1}{3}$ of the false positive predictions (in the case of Nebraska).



To address the high number of false positives, the team developed a data labeling interface to mark barn predictions as true or false positives. These labels can be added to the training dataset to improve future model retraining. [Left Figure]

Additionally, the team created an interface to randomly select validation sets. This interface allowed us to scan through and label both false positives and false negatives, and evaluate the model's accuracy after the filtering process. [Right Figure]