

Rural Advancement Foundation International (RAFI)

Currently, a few large corporations dominate the U.S. meat-packing industry, negatively impacting the price that small farmers are able to 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 two projects, livestock auction house trends and poultry barn identification.

The DSI team created an interactive dashboard that visualizes a time-series geospatial dataset of auction houses. The analysis suggested that the industry has been concentrating since 1990. RAFI used the dashboard during meetings with federal regulatory agencies to advocate for transparency in livestock contracting.

The DSI team also worked on a dashboard that shows market capture in the poultry processing industry. To measure market capture, the dashboard estimates sales data. Currently the dashboard uses third-party estimated employee count information to generate sales data. Instead, RAFI would like to count the number of poultry farms in captured areas to estimate sales. To achieve this, the team improved an existing computer vision model that identifies poultry barns from aerial photography. The team excluded barns located in airports, coastal regions, and major city centers, and removed about 10% of predictions as false positives.

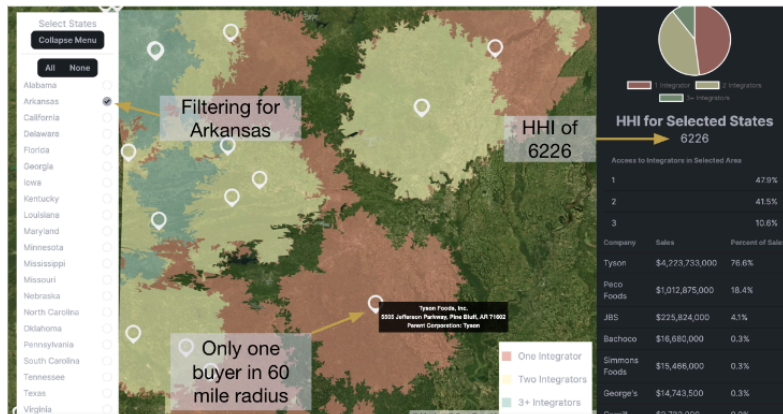


Fig 1: Snapshot of the dashboard created through the pipeline



Fig 2: Example of Computer Vision model (blue dots are positive predictions)

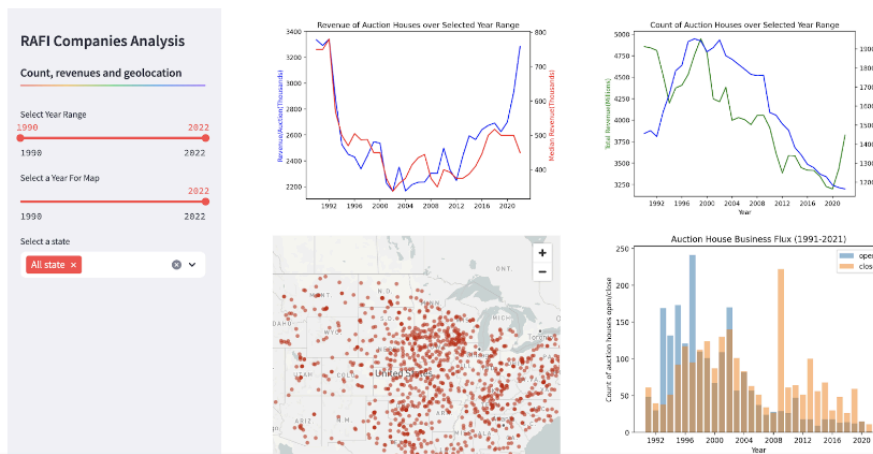


Fig 3: Partial screenshot of auction house dashboard. Interactive dials will change the visualizations presented