**ABSTRACT**

**AgriConnect** is an easy-to-use, AI-powered e-commerce platform designed to directly link farmers and customers, eliminating middlemen and ensuring fair prices. The system enables customers to discover nearby farmers, compare product prices and quality across locations, and receive smart purchase recommendations—all powered by advanced machine learning. This approach ensures fresher products, better market transparency, and improved farmer incomes.

**Key Features and Functionalities**

* **Farmer Discovery (Nearby Search):**  
  Customers can instantly view farmers closest to them based on location data. This helps reduce delivery time, improve freshness, and lower costs.
* **Smart Competition Comparison:**  
  The system compares farmers offering similar products—even across different administrative areas—showing customers price differences, quality ratings, and estimated costs. Recommendations are generated to suggest the best value option.
* **Direct Farmer-to-Consumer Marketplace:**  
  Farmers can list poultry products (chicken, eggs, manure) directly, set prices, and manage orders through a simple dashboard.
* **Demand Prediction & Trend Analysis:**  
  Proprietary ML models analyze market trends, seasonal demands, and pricing patterns to help farmers optimize production and pricing.
* **Nationwide Delivery Integration:**  
  Customers can order from any location, with integrated delivery management to ensure reliable service.
* **Admin Dashboard:**  
  Administrators can:
  + Manage farmer and customer accounts
  + Monitor transactions and performance
  + Oversee AI-generated recommendations and trend reports
  + View analytics on market activity and farmer performance

**Technology:**

* **Frontend:** ReactJS, TypeScript
* **Backend:** Node.js (Express)
* **Database:** SQLite
* **Location Services:** Geopy, Google Maps API
* **Recommendation Engine:** TF-IDF vectorization + Cosine similarity for price/quality comparison
* **ML Trend Analysis:** Scikit-learn, Pandas, NumPy
* **Authentication:** Google OAuth 2.0
* **Payment Integration:** Mobile money APIs

AgriConnect transforms the poultry market by combining location-based search, intelligent competition comparison, and predictive analytics to create a fair, transparent, and efficient farmer-to-customer network.