PICO 2:

PAPER TITLE

AI for Pest and Disease Management

Authors of paper:

Raghav Swaminathan

Paper Description:

- **P (Population):** Farmers of crops that are highly susceptible to pests and diseases, such as vegetable farms or vineyards.
- **I (Intervention):** An AI-driven pest and disease detection system. This system uses computer vision and machine learning to analyze images from drones, robotic scouts, or ground-based cameras to identify early signs of pest infestations or disease outbreaks. The system then generates a map of affected areas, allowing for targeted pesticide or fungicide application.
- **C (Comparison):** Traditional pest and disease management. This involves manual scouting by farm workers, where they visually inspect crops and make decisions based on experience, or a calendar-based approach where pesticides are sprayed at fixed intervals, regardless of actual need.
- **O (Outcome):**
    - **Reduced use of chemical pesticides/fungicides:** Measured by the volume of chemicals used per acre.
    - **Improved crop health and yield:** Measured by a reduction in crop loss due to pests or disease.
    - **Labor efficiency:** Measured by the time and effort saved on manual scouting.
    - **Environmental impact:** Lower chemical runoff into nearby water sources.