**ENGLISH**

**Machine Learning Innovations Reshaping Agriculture**

**Abstract**

Machine learning has helped in transforming agriculture into a more efficient,sustainable and productive field. Where farmers can be able to make informed decisions, mitigate risk and optimize resource usage.

This presentation focuses on how machine learning is applied in agricultural field which includes

1. Crop monitoring

Machine learning algorithm has helped in analyzing drone data and sensors to monitor crop health and assess the crop yield potential

1. Crop yield forecasting

Machine learning uses historical data such as weather patterns, soil condition and crop characteristics to forecast future yields.

1. Weed detection

Machine learning process images from drones to identify and classify the weeds

1. Pest and disease detection

Machine learning algorithm trained on historical data can be used to predict the pest and disease outbreak on crops

**KISWAHILI**

**uvumbuzi katika teknolojia ya habari**

**Ubunifu wa Kujifunza kwa Mashine Kurekebisha Kilimo**

**Muhtasari**

Kujifunza kwa mashine kumesaidia katika kubadilisha kilimo kuwa shamba lenye ufanisi zaidi, endelevu na lenye tija. Ambapo wakulima wanaweza kufanya maamuzi sahihi, kupunguza hatari na kuboresha matumizi ya rasilimali.

Wasilisho hili linaangazia jinsi ujifunzaji wa mashine unavyotumika katika nyanja ya kilimo ambayo inajumuisha

1. Ufuatiliaji wa mazao

Kanuni ya ujifunzaji wa mashine imesaidia katika kuchanganua data na vihisi vya ndege zisizo na rubani ili kufuatilia afya ya mazao na kutathmini uwezekano wa mazao.

2. Utabiri wa mavuno ya mazao

Kujifunza kwa mashine hutumia data ya kihistoria kama vile mifumo ya hali ya hewa, hali ya udongo na sifa za mazao ili kutabiri mavuno ya baadaye.

3. Utambuzi wa magugu

Picha za mchakato wa kujifunza mashine kutoka kwa ndege zisizo na rubani ili kutambua na kuainisha magugu

4. Utambuzi wa magonjwa na wadudu

Kanuni ya ujifunzaji wa mashine iliyofunzwa kwenye data ya kihistoria inaweza kutumika kutabiri mlipuko wa wadudu na magonjwa kwenye mazao

**KIKUYU**

**Umenyo gikiro-ini kia tekinolojia**

**Uhuthiri wa machini cia kiriu urimi-ini**

Umenyo wa kuhuthira machini hari guteithirira urimi-ini ni ukurite na njira nene icigo-ini nyingi cia buuri, kuria arimi matethikite hari ukuria wa iro na ihenya, gutua matua magiriru na gwithema kuri hathara iria mageragira urimi-ini ta kwaga umenyo wa riria mbura ikura.

Umenyo wa kimathomo hari uhuthiri wa machini wina baa tondu ni urateithirira arimi na njira nyingi ta ici

* Kumenya ndwari iria igumagira iro migunda-ini

Uyu umenyo wa kuhuthira data na kuhota guthomithia machini hari kumenya mithemba ya ndwari iria igumagira irio migunda-ini

* Kumenya magetha maria makugethwo

Machini ici ni irateithirira hari kumenya kana arimi ni makugia na magetha maingi kana manini na hau arimi makahota gwithema hari hathara kumana na magetha mao.

* Kumenya ria riria ritumaga irio igunda-ini ithuke

Machini ici irateithirria arimi-kumenya mimera kana ria riria rithukagia irio ci migunda niguo makahota kuhurana na thina uyu uria ungiaga guthaitirwo ucungagiriria hathara nene kuri arimi.