AI ANIMAL MONITOR

Group Assignment, Business Analysis 3.2 , 2023

Business Background

The Fourth Industrial Revolution (4IR) technologies, such as Artificial Intelligence,
Augmented Reality, Robotics, and 3-D printing.
These technologies are rapidly changing the way humans create, exchange, and distribute value.
We decided to create an Artificial Intelligence system called Smart-Shepherd for Vaal
University. 4IR is not a prediction of the future but a call to action. It is a vision for
Developing and governing technologies in ways that foster a more empowering,
Collaborative, and sustainable foundation for social and economic development. This
Smart-Shepherd system will help detect livestock's and check if they are in danger or safe.
The Smart-Shepherd will perform the following tasks:
Detect objects such as animal's types, humans and checking if animals are not dangerous to one another.
The purpose of this robot is not to replace Human-Shepherds, but rather to help them with taking good care of livestock's.

Information Tech

Benefits Of Our Robot

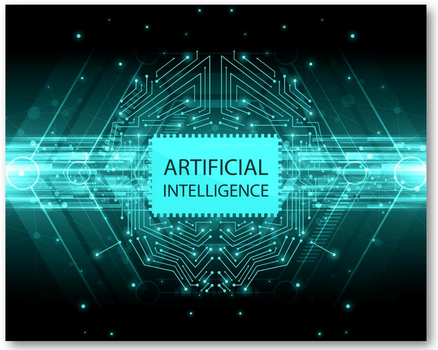
- Detect diseases from/to animals
- Livestock counting
- Mis- placement of Livestock (identification)
- Reduce Livestock poaching
- Protection of human workers
- Weather detector
- Create job for IT specialists
- They won't fall sick or get tired

Machine Learning

Semi-supervised: this type of machine learning approach allows robots to compare datasets, reinforce mutual observations and correct omission or over-generation, with this approach the humanoid will be able to adapt and equilibrium strategies

LIST OF CLASSIFIERS USED:

- Logistic Regression
- Random Forest
- Support Vector Classifier
- Class Misbalancing
- Decision Tree



Deep Learning

Here we present an artificial neural system that achieves a separation of image content from
style, thus allowing to recast the content of one image in the style of any other image. We demonstrate this by creating new, artistic images that combine the style of several well-known
paintings with the content of an arbitrarily chosen photograph. In particular, we derive the neural representations for the content and style of an image from the feature responses of high performing Deep Neural Networks trained on object recognition.