



Regina Analytics

Regina Analytics, Pty Ltd.

Bring Artificial intelligence to Agriculture

Advancement in
Agriculture technology for
to combat food security.



Finding ways to improve agriculture production

We are constantly looking for ways to improve agriculture production through artificial intelligence models



About Us

We are a professional services firm delivering AI-powered software and technical solutions to companies who want to leverage data and machine learning algorithms for business value.

Data Science



Artificial Intelligence

Making machines gain human abilities



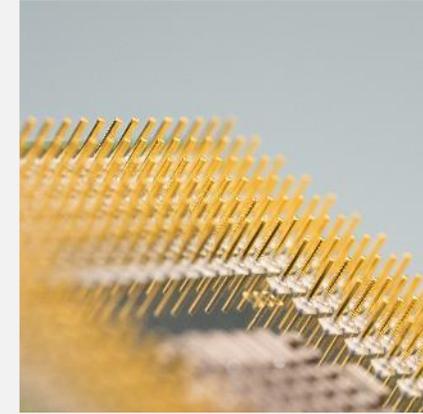
Machine Learning

Training a computer to make decisions



Deep Learning

Artificial neural networks, algorithms inspired by the human brain.



IoT devices

Configuring device-based models



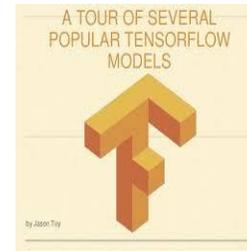
Data & Database management

Statistical Analysis, predictive modelling



Solutions

We model data, to give intelligence solution for agriculture problems in creating efficiency and effectiveness



Tensorflow models

Solving problems using Tensorflow



Training & Events

Artificial Intelligence is a new subject which needs training



Data Analysis

Database manipulation to develop sensible Business Intelligence systems



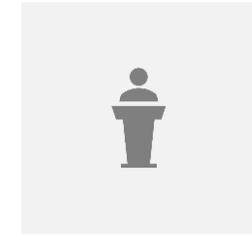
Products

We develop customized models to solve our client problems and deploy them in production



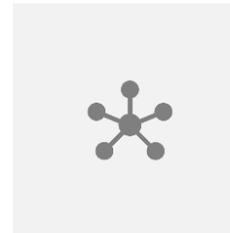
Unique

Customized to suite each customer



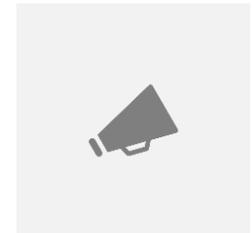
First to Market

We develop solutions that gives competitive edge



Tested

All our systems go under a process of clarification before deployment



Authentic

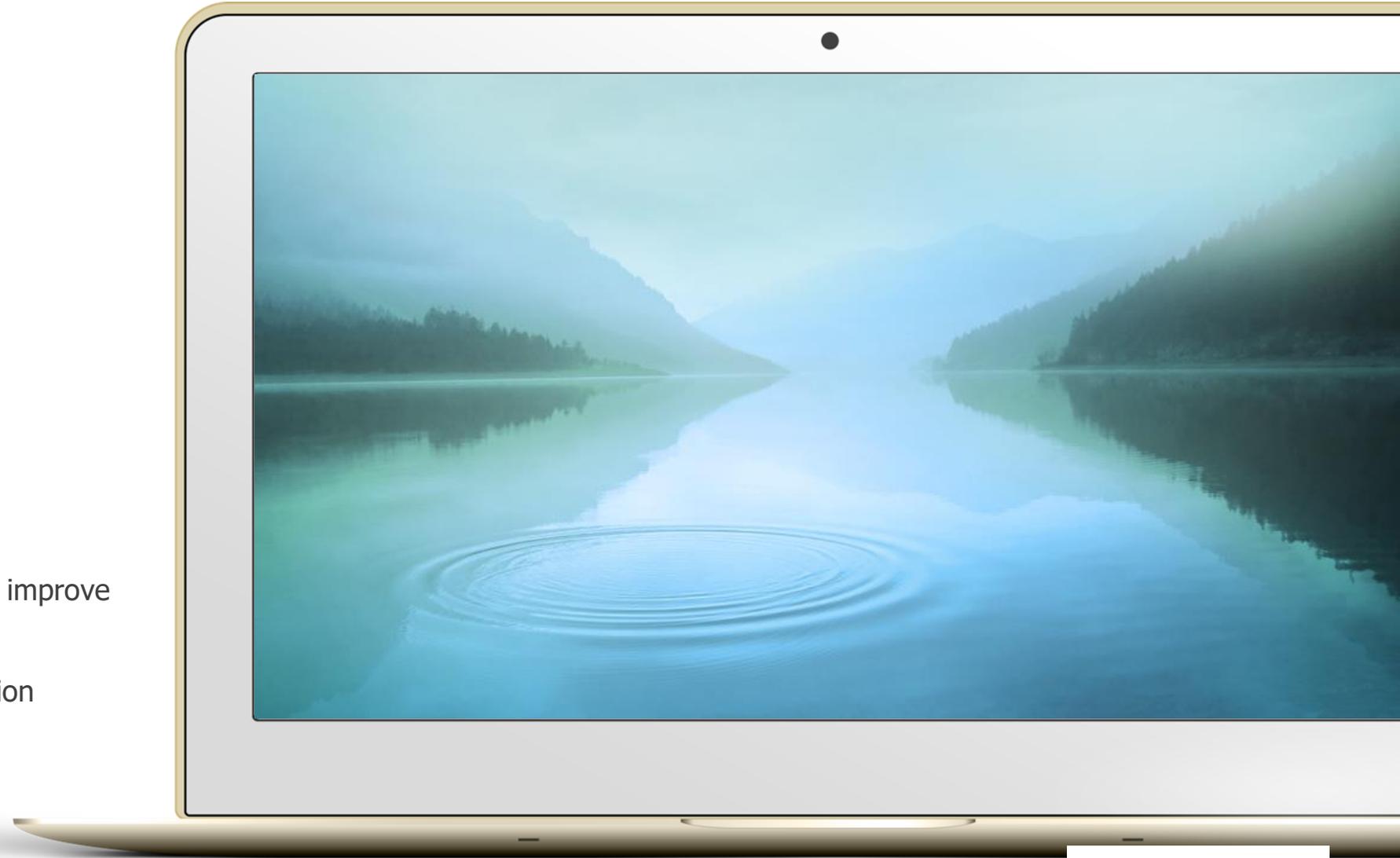
Developed through R&D for each specific customer

Cloud based Solutions

Can be accessed
anywhere

Other benefits include:

- Versions management
- Updates are frequently to protect and improve the interface
- Easy backup systems for data protection



Events and Training

We conduct meetup events for the people in AI community and also offer training.



Meet-up Events

There are events based on connecting, networking and sharing of ideas and developments in the AI community

Pie & AI

Regina Analytics presents Pie & AI meetup events and is constantly looking for sponsorship and partnership.

About Pie & AI

Pie & AI is a series of deeplearning.ai meetups that bring together the global AI community. Events typically include conversations with leaders in the world, thought-provoking discussions, networking opportunities with your fellow learners, hands-on project practice, and pies (or other desserts you prefer.)

Clarification of the Event

These events are independently organized by Regina Analytics.



Training

The venture offers soft skills training from people who just want to understand the subject matter to technical experts.

Mentorship Programs

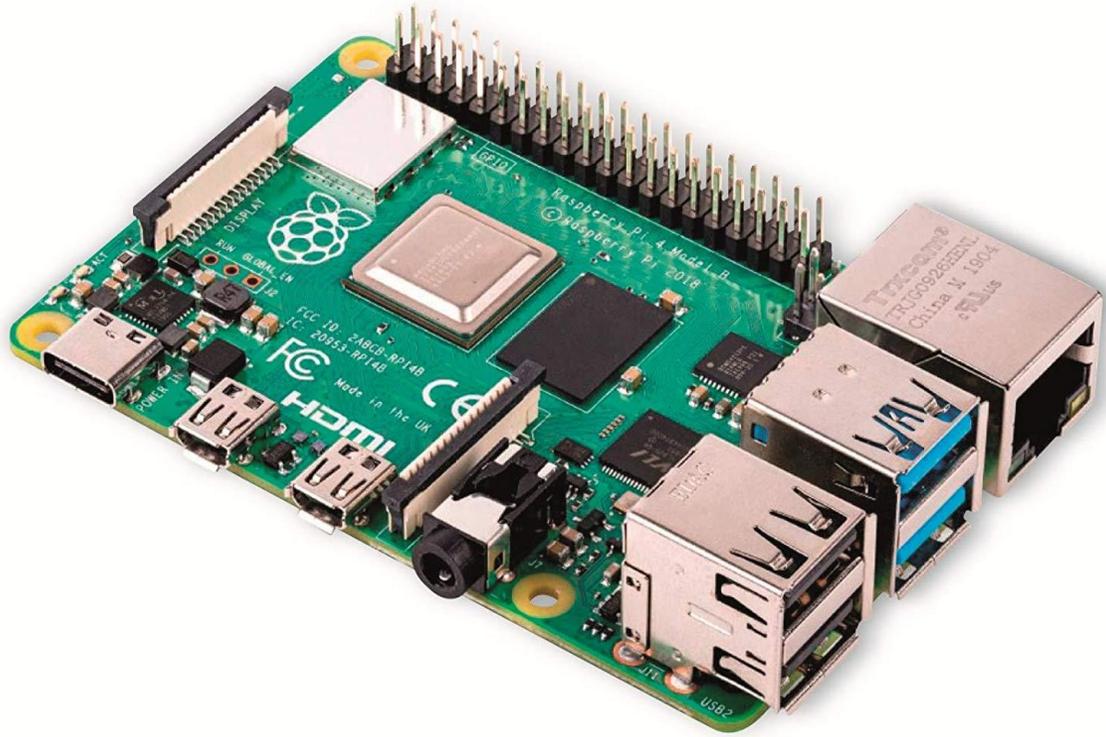
We have online platforms we are affiliated with, whereby the learners will register and could have physical mentors or support for various programs

Short Courses

We offer courses related to Data Science in the form of soft skills programs. From AI for everyone to more technical programs, like deployment of AI models.

Model development

We develop machine learning models that can be deployed in production to solve customer's problems like in mobile apps



Coral Dev Board (Mendel OS, Edge TPU Models)

A development board to quickly prototype on-device ML products. Scale from prototype to production with a removable system-on-module (SoM).

Raspberry Pi (Raspbian (OS))

The Raspberry Pi is a series of small single-board computers developed in the United Kingdom by the Raspberry Pi Foundation to promote teaching of basic computer science in schools and in developing countries.

Micro-Controllers (SparkFun Edge)

A self-contained system with a processor, memory and peripherals and can be used as an embedded system.

Android(Google) & Xcode(Apple iOS)

Models to be used on an Android devices or Xcode (iOS Apple) devices like image classification, voice recognition or object detection.

TensorFlow lite

TensorFlow Lite is an open source deep learning framework for on-device inference.



TensorFlow.Javascript

Develop ML models in JavaScript, and use ML directly in the browser or in Node.js.

Browser base model

Java Script, an open-source library you can use to define, train, and run machine learning models entirely in the browser, using **JavaScript** and a high-level layers API

TensorFlow Models




Regina Analytics

TensorFlow Models

TensorFlow is an end-to-end open source platform for machine learning. It has a comprehensive, flexible ecosystem of tools, libraries and community resources that lets researchers push the state-of-the-art in ML and developers easily build and deploy ML powered applications.

Tensorflow Serving Models

TensorFlow Serving is a flexible, high-performance serving system for machine learning models, designed for production environments. TensorFlow Serving makes it easy to deploy new algorithms and experiments, while keeping the same server architecture and APIs. TensorFlow Serving provides out-of-the-box integration with TensorFlow models, but can be easily extended to serve other types of models and data.

Enterprise models

Developing models to suit client needs that could be deployed in production. The models are not only limited to TensorFlow. The models could be in Amazon(Sage), Facebook(PyTorch) etc.



Data Analysis

Data analysis is a process of inspecting, cleansing, transforming and modeling data with the goal of discovering useful information, informing conclusion and supporting decision-making

Data manipulation process

The process whereby we evaluate data analytical and statistical tools to discover useful information and aid in business decision making. In which we use platforms like Microsoft SQL Server, SAS (Statistical Analysis System) for data management, advanced analytics, multivariate analysis, business intelligence, criminal investigation, and predictive analytics.



Partnerships

We are constantly looking for entities to partner with us in order to spread our wings in all sectors of production



Tortoise Application

Tortoise is an application software that was developed from a classification/detection Tensorflow model that runs on Android mobile devices.

Tortoise version 1 (Prototype)

The application is used to detect/classify diseases on a citrus plant, classifying the fruits from the following list:

- Black spot(mainly)
- Canker
- Greening
- Healthy
- Scab





Citrus Black Spot (CBS) disease classification Tensorflow model on Android phone

Continuous monitoring of the Citrus Black Spot disease (CBS) is required by South Africa Phytosanitary regulations

Why Citrus production

- South Africa's flourishing fruit industry has increasingly made up a bigger proportion of the international trade, said the Bureau for Food and Agricultural Policy in its latest agricultural outlook for the period 2018 to 2028. One in every 10 oranges eaten around the world now comes from South Africa. [<https://www.freshplaza.com/article/9136863/south-african-oranges-storm-world-markets/>]
- Development of a computerized model system that could do it in real time, giving farmers instant results and what steps to take, will be helpful.
- The export of oranges is forecast to increase by 4 percent to 1.33 Million MT in the 2018/19 MY, based on the increase in production, growth in demand from China and Hong Kong, and successful efforts in addressing the Citrus Black Spot (CBS) challenges in the EU market. [Source: USDA Foreign Agriculture service, Exchange rate: Rand/US\$ Exchange = 14, Marketing Year (MY) – January to December ,MT – Metric Tons]





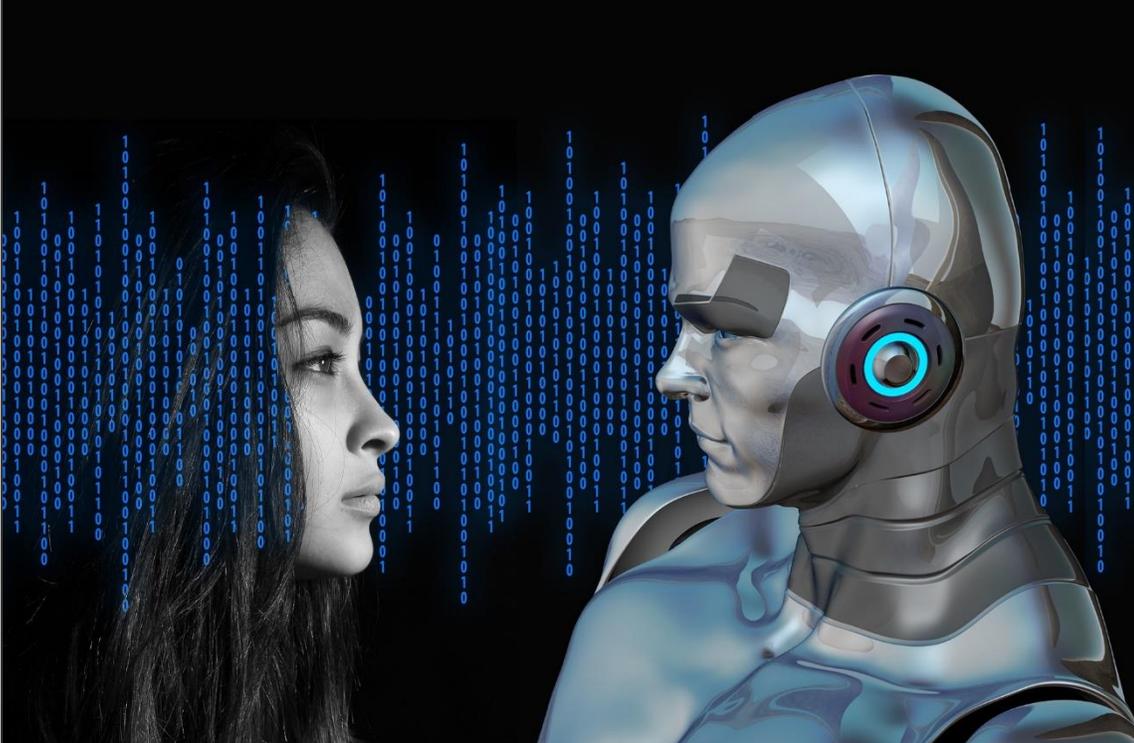
Finding a subject expert

AI can occur in any industry, you require a subject matter expert to develop solution that are more viable to a particular solution

Partnering with North West University (Mafikeng Campus)

We have developed a prototype of a machine learning model that runs on android as an app that can detect diseases. In order to substantiate our product, we are in a process of partnering with North West University to provide facilities, and support as the subject expert in Plant Pathology and Research.





Partnerships & Sponsorship

We are open to partner with other entities

Future prospects

We are open in partnering with different entities on different project that is in the line of our operations.

R & D

We are constantly working on finding the latest and best solutions for different problems in agriculture in particular.



Collaborating in R & D

Our vision is to introduce the best technology in the agriculture. We always looking to collaborate to produce world standard solutions.

R & D (Research and Development)

AI is based on data processing to develop models. Which makes the bases of our operations focus on R & D which is capital intensive for the operations. We are always looking for investors and funders in this area if we have a project.



Investment Opportunities

There are different options for investment in the venture.

Options for investment

- Invest in a particular research and development project and gain stake on the (Financial gain)
- Buy the project and own all the rights
- Partner with the venture and agree on the contributions and gains from the project.

Team



**Michael
Mutekeri**

Data Scientist/CEO

Bsc, Bcom Honors,
MCSE,CCSA,IITPSA



**Moshawa
Modise**

Non-Executive Director

B-Tech, IPM

We focusing on predictive analytics, natural language processing, and computer vision, we help businesses innovate with AI, enrich customer insights, automate processes & be more cost-efficient. This is ensured by our proprietary technologies, exceptional customer care, constant investment into talent development and R&D.



Summary

Nothing is Impossible



Regina Analytics Pty Ltd.

Thank You

 Michael Mutekeri

 +27 76 490 8390/ +27 11 039 2098

 Enquiry@reginaanalytics.co.za

 <http://reginaanalytics.co.za/>