About Matoha

Matoha is a UK based startup founded by scientists and entrepreneurs from Imperial College in London. It addresses the urgent need for an affordable material identification device to help with efficient waste sorting in order to sustain a truly circular economy. Using its scientific and engineering expertise, the company developed low-cost hand-held scanners that can easily identify plastics or fabrics anywhere, anytime. Matoha's affordable scanners can be deployed and used even in the most remote corners of the world.

Matoha Instrumentation

Matoha's patent-pending devices combine NIR (Near Infra-Red) spectroscopy and cloud-based machine learning algorithms. Current large scale automated sorting facilities use the same technology of infrared spectroscopy to sort plastic waste at a much higher cost. The devices are being used in MRFs (Material Recovery Facilities) around the world, particularly in countries and regions that lack the resources and the infrastructure to build automatic sorting facilities. Currently, Matoha offers two types of devices, one destined to analyze plastics named PlasTell (shown in Figure 1) and one to analyze fabrics called FabriTell. Manual sorters equipped with these devices will be able to analyze and decide which materials to recycle faster and with much higher precision.

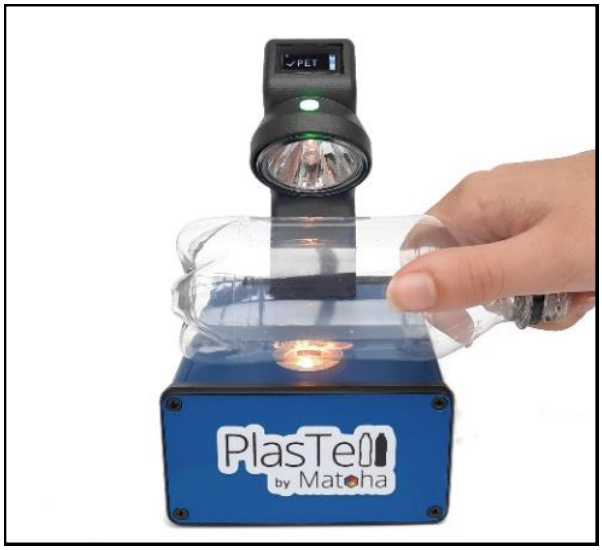

Figure 1: PlasTell, portable plastics analysis scanner

Cloud – Edge Cooperation with Ampere Altra A1

Matoha's algorithms exploit modern Big Data and Machine Learning methods to continuously analyze, benchmark and improve performance. Given the portability and the necessary affordability of the scanners, the heavy lifting is done in the cloud. Matoha trains its ML algorithms in the cloud, then downloads the latest version of its software to the scanners keeping them up to date.

In turn, the users can upload their data to the cloud to gain additional insight and enable Matoha to grow and curate its datasets to further improve performance, gain in accuracy and keep any data drift under control.

Matoha had a choice between multiple cloud service providers as well as many types of compute resources offered by these providers. After evaluating several suppliers and AI platforms available to them, Matoha selected OCI (Oracle Cloud Infrastructure) and its ARM based Ampere Altra A1 compute instances. Matoha's machine learning algorithms could efficiently be trained with Ampere Optimized TensorFlow on Ampere A1 CPU instances leading faster performance than competing CPUs and at the same time proved to be significantly more cost effective. The combination of Ampere A1's faster performance and its competitive pricing on OCI resulted in Matoha's achieving a significant cost reduction.

Looking Forward

Ampere is excited to support Matoha in providing cost-effective solutions in their fight to reduce pollution. Enabling and facilitating the detection and disposal of plastic waste across the globe, particularly in regions that lack the costly large scale industrial resources, cleaning up plastic waste sites becomes easier and more affordable. Ampere and OCI are proud to provide their industry-leading services to Matoha, an innovator delivering a practical solution targeting the environmental issues burdening our planet. Ampere's highly scalable and flexible A1 compute resources will easily adapt to Matoha's growing needs as they scale their operations and add new devices and algorithms to their portfolio.

About Ampere AI

Ampere AI provides Ampere® Optimized Frameworks for AI workloads on Ampere Altra® family of cloud native processors. Ampere Optimized Tensorflow, PyTorch, ONNXRT, and TF Serving achieve superior performance compared to legacy architectures running on the high performance, low power Ampere Altra CPUs. Ampere AI leads in AI inference performance and provides a very compelling value proposition for training in a number of cases such as Matoha's.

For More Information

Learn more about the full range of Ampere AI solutions at the Ampere AI Solutions Portal.
Get to know Matoha material identification devices at the Matoha website.

How about OCI?

Matoha
What will you scan next?