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United Siyafunda

In a rapidly evolving technological landscape, access to quality education in Science, Technology, Engineering, and Mathematics (STEM) is critical for empowering learners in under-resourced schools and communities. United Siyafunda NPC has been actively working to foster this access, particularly in township schools.

Founded in 2020, the organization aims to promote access to STEM education in under-resourced schools and communities through the provision of coding and robotics training programs, and recently – through NMB TECH, the private leg of the hybrid structured social enterprise - by developing affordable EdTech resources for marginalized communities.

At the helm of United Siyafunda NPC are **Veli Mokhabodi**, the Managing Director, **Dieketseng Nibe**, the Operations Director, and **Musa Baloyi**, the Technical Director. Their leadership has been instrumental in expanding the organization's reach and impact. Under this leadership, United Siyafunda NPC was established in 5 Communities in Gauteng, South Africa, providing thousands of learners with access to coding, robotics, and digital training programs.

Recent accomplishments include winning the 2023 African Impact Challenge: Community Impact Stream for work

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done in township schools and robotic clubs. The organization partnered with local stakeholders in governments and educational institutions in the Kingdom of Lesotho to facilitate the 2024 Lesotho Robotics Expo, which has promoted, showcased, and enabled the implementation of innovative Coding and Robotics training programs and contests.

To combat challenges faced by under-resourced schools and communities, concerning the high cost of robotics equipment, United Siyafunda NPC is actively developing solutions aimed at reducing costs associated with coding and robotics education.

Starting with the development of a zero-rated Learning Management System (LMS), running on an AI platform that leverages neuroscience and quality STEM content to deliver a learning experience like no other.

The LMS will lessen the strain on the current learning process by employing AI Analytics to enhance the learning experience. The issue of overcrowded classrooms will cease to affect the learning experience because the LMS will offer an individualized approach to teaching that adapts to each learner's strengths and areas for progress.

Adopting gamification elements to create an enjoyable and productive platform, the LMS will drive access to quality STEM education and education in general, to schools and communities in scale. This LMS is developed not just to enhance students' technical skills but also to prepare them for future employment in an increasingly digital job market.

The organization envisions teachers using the platform's data analytics to curate teaching strategies that will be individually effective to every learner while leveraging on the insight given into the learners' progress, engagement, and cognitive responses. The platform has workspaces with virtual robotics kits/equipment creating a more sustainable model for providing scalable

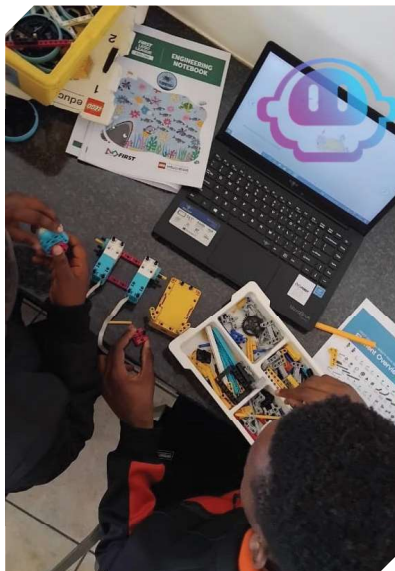
access to robotics training. Applications of the LMS in the education field are numerous since it can be configured to cater to multiple nuanced environments.

Following the LMS is an educational robotic kit developed using an Arduino board as the brain the system (controlling various functions and attachments). Together with the LMS, the kit can be tailored to suit learners of different levels, with simple tasks for younger students and more complex algorithms for advanced learners.

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United Siyafunda NPC stands at the forefront of a movement aimed at bridging the digital divide in South Africa's under-resourced communities. Through effective leadership by Veli Mokhabodi and Dieketseng Malekele, coupled with innovative solutions to overcome challenges like high equipment costs, the organization is making significant strides toward ensuring equitable access to STEM education.

As it continues to empower youth through coding and robotics training, United Siyafunda NPC not only enhances individual lives but also contributes to building a more skilled workforce capable of driving economic growth in South Africa. The journey towards achieving these goals is ongoing, but with each step forward, United Siyafunda NPC reaffirms its commitment to fostering a brighter future for all South Africans through technology and education.



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- ▶ The training does not stop there though. Each business has specific terminology that needs to be aligned with to accommodate FAQs, rules, product info and the like.
- ▶ In our experience though, we find it advantageous to explicitly leverage product-specific language with our models to really ensure that the interactions are meaningful and the customer experience is as expected. Take the word balance again - for an investment account it has a positive meaning, but the same can't be said for a home loan or other forms of credit.

These are the tips of many, many icebergs.

This level of sophistication requires not only skill, but a platform robust enough to manage any mode of input and marry them with the correct response. This requires language detection, sentiment analysis, intent mapping, integrations and much more. Doing the same for other languages like Zulu or Afrikaans is therefore not just a simple exercise of translation. Further work needs to be done in order to leverage the initial investment and effort.

The above training of these LLMs needs to cater for text-based interactions as well as factor in alternative modalities – voice, vision or even virtual reality.

It is a big, big undertaking, and you can now see why it's not as simple as plugging the likes of ChatGPT into your brand platforms.

We have just taken a new product to market called Helm Gen, which makes use of a pivotal advancement in the realm of LLMs called Retrieval-Augmented Generation (RAG). Once we have unpacked the problem, investigated and addressed all of the considerations above, Helm Gen uses RAG to provide a Generative AI solution that operates within the bounds of brand content, while limiting 'hallucinations'.

The reason I mention this now is that the considerations I have raised here are not intended to dissuade anyone from using these GenAI solutions – all we are trying to do is ensure that businesses understand the investment required to truly realise the benefits of Generative AI for business.

Let's chat.

Chat to Dawood by booking an appointment [here](#).

To find out more about Helm, visit their [website](#).