

# Tackling inequality in computer science

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Riaz Moola is a Gates Cambridge Scholar doing a master's in Technology Policy, but he also runs a company which aims to revolutionise the study of Computer Science in South Africa.

An African revolution in computer [science](#) When he went to university in South Africa, Riaz Moola came face to face with the huge differences in educational opportunity in his country, particularly in his own subject, Computer Science.

Instead of just getting on with his course, Riaz - now a Gates Cambridge Scholar at the University of Cambridge - devised a way of tackling the problem. Inspired by recent MOOC platforms such as Coursera, he created an online course platform adapted to Africa which paired tutors - typically Computer Science graduates - with students trying to learn programming through a low-bandwidth, text-based resource. The platform has now grown to the largest of its kind in Southern Africa, supporting over 8,500 students from six African countries. This platform is driven by Riaz's start-up - Hyperion Development.

In late 2015, Google selected Hyperion as the first South African organisation to lead a national initiative to revolutionise the fields of Computer Science and software development in South Africa. Hyperion will work with bodies such as Computing at School, the South African government and the Python Software Foundation to bring computing-related fields in South Africa up to international standards and to accelerate the training and development of a new generation of programmers in Africa.

There are many obstacles standing in the way of the growth of software development as a field in South Africa - a country where programming and Computer Science are still often labelled as 'IT'. High dropout rates at schools and universities across the country have contributed to a decline in programming and Computer Science knowledge at a national level. The skills gap continues to impact industry as employers struggle to fill software development roles and align their technologies to international industry standards.

It's something Riaz experienced personally when he went to the University of KwaZulu Natal to study for a degree in Computer Science. The vast majority of students doing the same degree as him dropped out after the first semester as a significant number had never used a computer before, but were expected to write code. In 2011 he

transferred to the University of Edinburgh to study Machine Learning and Artificial Intelligence, a subject which is not available to undergraduates in South Africa. It made him think that people in his country should be able to take it and his experience studying in the UK made the contrast between educational opportunities in both countries clearer to him.

## **World of warcraft**

The foundation for Hyperion's online course platform is the simple idea of using Dropbox to link students and tutors. It allows them to exchange text and programming code files without high data costs or reliable internet connectivity. The tutor base was sustained and grown through models borrowed from online communities popularised through massive multiplayer online games such as World of Warcraft. Riaz says: "I thought if I could link Dropbox and the material I had learned at Edinburgh to a community that scales in the same way they do in these online games, we could build an unusual but effective way of tackling an endemic educational problem in the field."

Since these modest beginnings, Hyperion has grown from a group of student volunteers to a team of 10 employees hosted in offices in South Africa and The Social Incubator East programme in Cambridge. Hyperion has moved on to launch services that tackle wider issues in the field, such as the Hyperion Careers platform which links [software developers](#) to jobs across the country and the Hyperion Hub which hosts software development-related articles from an African perspective.

Riaz, who is doing an MPhil in Technology Policy, says: "Every aspiring programmer or computer scientist in South Africa - and Africa - should have access to internationally excellent educational opportunities. Our partnership with Google will allow us to do that and will help to establish the Computer Science Association of South Africa - the first

professional body of its kind in the region. This will catalyse the improvement of Computer Science education on a national scale, from a primary school to industry level."

**More information:** [www.hyperiondev.com/](http://www.hyperiondev.com/)

Provided by University of Cambridge

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