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Top maths and computer science boffin graduates at 19

Kialan Pillay is graduating with a first-class bachelor's degree in computer science and mathematical statistics from the University of Cape Town (UCT) at just 19 years old, having finished his high school career as the top matriculant in KwaZulu-Natal at just 15 years old.

He excelled at school, jumping from Grade 2 to Grade 5, and starting high school at the age of 10. While terms like "The next Einstein" and "Prodigy on the rise" have been used to describe him, Kialan remains humble and credits his success to hard work and dedication.

"What has always been a core theme in my life is constantly pushing myself and growing holistically, regardless of the outcome or reward," he said.

"I've never let my age hinder me or inflate my ego. While I could have felt external pressures to achieve and succeed, I've been steadfast in not letting that dictate my path. If I had to encapsulate my 'formula' for success, it would be a combination of a consistent growth mindset and diligence.

"I've also been really blessed in my time at UCT to have been surrounded by so many other intelligent, like-minded individuals, which has made for an enriching university experience." As with most other things in his life, Kialan's interest in computer science started early.

"I was 11 years old and had completed building a game in the Scratch programming language during an information technology lesson. At that moment, I decided that this is what I'd like to spend my life doing. I was immediately hooked and haven't looked back since," he explained.

For the young achiever, it was the endless possibilities presented by computer science that solidified his enthusiasm in the field. "In our increasingly globalised, automated, digital society, computer scientists have the opportunity to impact society in a multitude of contexts."

Kialan noted that these interests, rather than a "rigid schematic", guided his educational journey. "I have the flexibility to follow my passions and work in a range of environments and communities. I've been fascinated by artificial intelligence (AI) and its applications for several years, so I chose mathematical statistics to give myself the foundation to pursue different AI and machine learning (ML) endeavours."

In addition to focusing on his academic success throughout his university career, Kialan has been actively involved in a number of extra-curricular programmes and activities. A highlight is the research project he completed under the supervision of Associate Professor Deshen Moodley.

"My research project investigated unsupervised learning algorithms [a branch of ML that aims to classify and find structure in unlabelled data] used for predicting and generating household energy consumption patterns in South Africa. The project used a comprehensive dataset of metered household energy consumption data logged from 1994 to 2014," he said.

Although the evaluated algorithms produced poor performance, and Kialan determined them to be unsuitable for the purpose, the project made an important contribution to the sparse literature on energy consumption patterns in developing contexts. It also provided the young computer scientist with a novel learning experience and helped him to develop a fruitful relationship with his supervisor.

"I interned in the Adaptive and Cognitive Systems Lab at the Centre for Artificial Intelligence Research under Associate Professor Moodley. Gratefully, he also became my supervisor for my research focused on investigation graph neural networks – a class of deep learning models in an intelligent system for automated Johannesburg Stock Exchange share evaluation and portfolio management."

Following his graduation from UCT, Kialan will be working at Amazon Web Services while awaiting the outcomes for his applications to complete his master's at an international university.

While his hard work and determination have contributed to his success, Kialan is quick to recognise that the support he has received from those around him has been integral.
"I am deeply indebted to my mother and late father. None of this would be possible without them, and my success is every part theirs. It is through their hard work that I have been blessed with incredible opportunities for learning throughout my life and look forward to repaying their kindness and love."

Written by Nicole Forrest, UCT News

Kialan Pillay   Photo: Supplied

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