

My Personal Statement: Innovation for Social Impact

My passion in Applied Mathematics lies not just in its abstract algorithms or complex computations, but in its potential for societal transformation. This belief catalysed the birth of Simue Labs, my independent innovative research hub, where I directly apply my skills to solve Africa's biggest problems.

My commitment to social impact began early, starting from childhood but becoming clearer at a high school science fair where I explored using Lake Victoria's invasive water hyacinth to produce biofuels. In 2020, discovering the transformative potential of Applied Mathematics, including Machine Learning, led me to delve into courses as I sought to become a leader in this technological era.

One of my proudest projects, an automatic power grid fault detector and classifier, uses Machine Learning algorithms to detect and classify symmetrical and asymmetrical faults, detect partial discharge, and isolate faulty parts of the power grid. This system can improve efficiency and address power issues in Kenya. I've also partnered with Kenya's largest retailer to develop an IoT weighing scale that uses Machine and Deep Learning models for inventory management and sales forecasting.

Recognizing the increasing prevalence of cyberattacks in the country, I also designed and developed an ML-powered threat hunting system. In my future studies, I aim to develop sophisticated systems that can replicate realistic attacks to help companies strengthen their defences.

Currently, my focus is on the mathematical analysis of protein folding and its applications in drug discovery. I have developed a deep interest in the application of computational principles to healthcare and even aim to establish a Pan-African health-tech startup in the next few years. The startup will leverage 3D printing and machine learning to develop affordable medical devices for the African population.

While these goals seem audacious, my long standing passion for innovation and social impact coupled with my resilience will ensure I stick to the most meaningful goals until the end. My long and arduous journey with ADHD is also a testament to my levels of perseverance, patience, fearlessness when exploring novel ideas, and how incredibly hard I can work against all odds.

Joining The University of Manchester isn't just about acquiring knowledge, it's also about getting access to some of the world's most experienced mentors, networking with the best in the industry, and being part of a community that shares my passion for innovation and social impact.