

## Statement of Purpose

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Despite being born in a family where there were no university graduates, becoming a scientist and university professor has always been a dream for me. However, I was lucky to have parents who knew the importance of education and instruction, who instilled values and principles in my youngest. The fact that my father was a primary school teacher essentially helped me access knowledge and develop my curiosity for science at a very young age. This helped me to love school, to develop passion for science, mathematics, languages, geography, and history. For instance, I started learning English when I was barely ten years old, thanks to my older brother who introduced me to it.

I did the science stream at secondary school where there was an increased dose of mathematics, physics and chemistry. I was particularly drawn to the challenges posed by math problems, which were often difficult to solve and became a fun mental exercise. I finished second in my class, with the best grades in mathematics and physics. The omnipresence of mathematics was already so remarkable to me in high school.

To fully nourish my curiosity for this science, I entered the university of Kinshasa, to everyone's slightest astonishment, to study mathematics. There, I studied for 5 years to obtain a 5-year bachelor's degree in mathematics. I was exposed to mathematics and statistics, I took courses such as: Inferential Statistics, Probability Theory, Applied Probability (Queueing theory, stochastic processes, etc.), Functional Analysis, and Algebra. I graduated as the top performing student in my class and department, making me the first scholar in my family. It was during my third year of university that I realized the essential role of statistics in today's world where data storage and processing capabilities are becoming increasingly sophisticated and where there is a growing need for specialists and people to help make informed scientific decisions and predictions. I then decided to dedicate myself to deepening my knowledge in statistics, machine learning and mathematics. After graduating from university, I volunteered in the department giving hands-on classes and mentoring first and second year students. I also taught for about two years in higher institutes in my country.

Currently, I am in my final days on scholarship at the African Institute for Mathematical Sciences (AIMS), South Africa, where I am completing a Masters in Mathematical Sciences in partnership with the University of Stellenbosch. In my research project (which I will present soon on January 29), I delved into Functional data analysis and Gaussian process regression, where I extended a Gaussian process functional regression (GPFR) model found in the literature to a multivariate case where the covariates are not necessarily defined on the same domain. This model extends the scope of application of the GPFR. This experience has broadened my knowledge and skills in advanced statistics, data analysis, reinforced my resolve to stay associated with academics, and increased my interest in scientific research and the teaching profession which I dream of becoming a Professor in the near future.

Pursuing a Ph.D. has been a lifelong dream that fuelled my enthusiasm. As I approach the end of my master's program, I engaged in a discussion with Dr Serge Phanzu regarding my ambitions for further studies. He then suggested me to seek admission to your esteemed university, Bowling Green State University (BGSU), of which is an alumnus. After researching online, it became evident to me that BGSU aligns perfectly with my academic and research objectives. Several reasons helped me to make my mind, among these are : the strong commitment of the university to excellence in interdisciplinary research, especially in Mathematics, Data Science, and the practical applications facets set BGSU apart. The collaborative environment at BGSU, where scholars and students from diverse backgrounds engage, is simply fantastic. I believe that the university is an ideal place where I can realize my aspirations. My motivation to pursue a Ph.D. in statistics is firmly grounded in the desire to expand the frontiers of knowledge and innovation in the field and also to fulfill a personal dream. I am very enthusiastic about engaging in cutting-edge research in statistics and data science under the guidance of your esteemed professors.

On the interpersonal side, I am a social, energetic and dynamic person, a good communicator, an ability that I have also developed through my experience as a teacher in secondary school and at university. I adapt well in the inter-cultural environment, for example at AIMS SA, an institute which brings together students from all over Africa and teachers from various countries, such as the USA, United Kingdom, Germany, etc. I believe that I will have no trouble integrating into the inter-cultural environment like BGSU, and the USA in general.

I trust that granting me the opportunity to continue my studies at Bowling Green State University would not be a decision you would regret. I promise to respect the rules of the country and the university. I also promise to work hard and hard. I deeply believe that effort and enthusiasm can fuel success. I would organize my time to ensure my academic success, conduct research, attend conferences and seminars, and support the university, if necessary, in tasks such as teaching. This opportunity will allow me to improve my personal life and to acquire skills and abilities that will be important for my future professional aspirations. It will greatly open the doors to excellence and opportunities to work in academia, as well as being a consultant in statistics and data science to governments, businesses and non-governmental organizations. On the other hand, it will help me to contribute effectively to the improvement of my country or Africa, which has a visceral need for scientific and professional executives to support its scientific, technological, economic and social development.

I humbly request that you consider my application for this program. Thank you in advance for your valuable time. I look forward to receiving your reply.

Cape Town, January 22, 2024.  
**NLANDU MABIALA Jérémie**