Statement of Purpose

My names are Albin Shema, I am writing this statement to support my application for admission in the Master of Science in Information Technology (M.S.I.T) program at Carnegie Mellon University (CMU) – Rwanda. I am a 23-years old male, born in the Democratic Republic of Congo (DRC), and raised in Rwanda. Since my childhood, I have been fascinated by tech gadgets. My father who knew it right from the start encouraged me to take up mathematics and computer subjects during my secondary school education. At the time when I completed my secondary school (2012), my country was at a crossroad of demarcating itself as a regional ICT hub. This policy intent instilled my resolve to pursue IT-related undergraduate program at University.

The field of software engineering had attracted my attention and passion. I was particularly fascinated by modern-world computer applications that bring sustainable solutions to enhance efficiency in a world of ever increasing cost of doing business and public policies. With such an inclination, I enrolled in a Bachelor of Science in Information Technology (BSIT) at the Adventist University of Central Africa (AUCA), majoring in Networks and Communication Systems. Over the course of this program, I have been exposed to the basic concepts of database management, network programming and security, mobiles communication systems, etc… With the skills set that I acquired in programming (mainly with the Java programming language), I was able to assist a local health clinic called *Centre Medical ORKIDE,* where I worked as a part-time IT Support Staff, to migrate from a paper-based client registry to a full-fledged digital client management system. In this job, I developed a client management system that registers clients, saves their medical history, and manages a billing system linked to respective medical insurance service provider.

This achievement gave me confidence that I could pursue software development career. As part of my final year research project at AUCA, I am currently working on a web-based education finance management information system that will help the Development Bank of Rwanda (BRD) recovering student loans (by linking with social security details) and provide the debtors with loan account statements. Once rolled out, this application will constitute an important input into the ongoing transformation of the education system in Rwanda.

In addition to those academic and professional credentials, I also work as a part-time field enumerator for Laterite Ltd, a research firm based in Kigali. This job has exposed me to innovative data collection tools and software (e.g. SurveyCTO). In a recent project, I was part of a team that implemented for the first time in Rwanda voice-assisted surveys using software called ACASI (Audio-enhanced Computer Assisted Self-Interview).

With a BSIT degree, I can take up a number of good jobs in the software development field. However, my vision is to become a renowned African IT business entrepreneur. My intention is to build a business empire around software development, a business that propose efficient and effective IT solutions that impart innovations that constitute quick-fixes to modern developmental challenges with special focus on Africa. Specifically, the concept of "smart cities" has recently attracted my attention. My country,

Rwanda, has a vision to fast-track urban development, leveraging on existing ICT infrastructure (optic fiber, mobile telecommunication networks), to become a model in the region. One of the major constraints to urban management in Rwanda is related to space. Through this challenge, I see a significant business opportunity in developing IT platforms for urban space management. Specifically, I intend to develop a platform that can not only facilitate the public to access available parking facilities and owners of parking spaces to obtain reliable customer base, but also the city managers and engineers to obtain invaluable real-time information on the patterns of demand and supply of urban parking spaces.

This vision requires more skills than what a BSIT degree can offer. It requires a strong understanding of a mix of software systems architecture and IT and software development projects management, something that remains beyond my reach. Notably, the realization of my business idea of urban space management requires fluency in modern programming languages and a strong command over programming tools (e.g. Compiler, Debugger, IDE…). In addition to this, building an innovative platform requires a solid understanding of IT in the context of business.

I believe that CMU has the right learning facilities and culture to obtain the necessary skills required to enhance my business ideas, fostering my software engineering skills. CMU Rwanda offer a unique chance to receive training from worldwide renowned scholars that have long been recognized as authorities in the field of software engineering and with research interest in smart cities and other related concepts (e.g. Prof Ramayya Krishnan). Being a quick learner and a good team player, an opportunity to enroll at CMU in the MSIT program will compel me to exploit the facility to the optimum level and come out with exceptional skills to provide a global perspective to a local context. I believe that this will ultimately allow me to achieve my long-term vision.