I never imagined that my education would end up saving a life.

With a “triple immigrant” family background – I was born in Canada to Chinese immigrant parents before moving to the United States and then immigrating again to South Korea – I am acutely cognizant of just how interconnected people are to one another, even across countries. Thanks to the internet, national borders that once dictated the accessibility of education are more porous than ever. With such massive quantities of data and information flowing across international borders, someone must be able to make sense of it all and provide the best means of communication between customers and providers. Unfortunately, this unprecedented increase in opportunities did not come with a *proportionate* increase in access.

Although I graduated from college in 2014 and finished my second graduate degree in 2019, I have not ceased availing myself of the power of the Internet to augment my skills and knowledge. In 2020, I made an account with the company MasterClass, and completed a course on negotiation taught by a former FBI hostage negotiator. Despite having zero formal training in managing mental health crises, the skills and knowledge I agained from this course allowed me to take a suicidal person into calming down, opening the door, and even laughing at a few of my jokes in the end. This experience showed me the real impact that education can have on improving (or in this case, even saving) people’s lives, which led me to think to myself, “Is there any way to increase access to this kind of education to more people who need it?”

In the 21st century, there is no excuse for failing to adequately provide a solid education to every individual on the planet with the ambition to learn. Fortunately, educational outcomes can be measured, and if something can be measured, it can be improved. I plan to avail myself of the skills that I will gain in the MCIT to become a data scientist at an educational company, and expand learning opportunities to those who would benefit most from them, such as by implementing data-based recommendations to help increase student engagement and retention. I desire to find the answers to questions such as, “How can we ascertain how much students have learned?”, “What can we do to help students apply what they have learned?”, “How can we reach a wider audience?”, and even more.

Doing so would require a deep understanding of programming, information technology, and data science. Hence, MCIT’s curriculum greatly appeals to me in a variety of ways. Within the core curriculum, CIT 591 *Introduction to Software Development* will familiarize me with the applications of Python and Java, both of which are powerful tools for the field of data science. On that same line, after completing the core curriculum, MCIT’s elective offerings, specifically courses such as CIS 515 *Fundamentals of Linear Algebra & Optimization* and ESE 542 *Statistics for Data Science: An Applied Machine Learning Course*, provide the exact training I need to achieve these career goals.

In particular, what draws me to computing for data science is the dispassionate and agnostic nature of data. During a final project for a class called *Introduction to Quantitative Political Science* at John Hopkins University, I opted to use statistical inference to analyze the death penalty as applied in the United States. I had hypothesized that, due to the high pecuniary cost of capital punishment, the fifteen counties in the United States that most frequently meted out this form of punishment would have higher per-capita incomes than those that do not. Ultimately, using a 95% confidence interval, a simple z-test revealed that I was unable to reject the null hypothesis. Although this project was a “failure” in terms of its result, it allowed me to experience firsthand the power of data, when properly analyzed using the appropriate tools, in providing objective insights to help improve society, irrespective of any human biases.

To expand upon my training, I have taken advantage of resources including Coursera to acquire technical skills that will be beneficial for success in the program. Notably, I have earned various certificates from Coursera in Python programming and have completed the Python portion of the Coursera specialization *Introduction to Programming with Python and Java*, as taught by Brandon Krakowsky, as well as the *Introduction to Computational Thinking for Problem Solving* course, and I am currently going through the Java portion of the specialization.

As a gainfully employed, full-time worker, it would be difficult for me to take time off from work to pursue a degree in person. Additionally, I am in South Korea on a limited work visa, and I aim to apply for permanent residency in a few years. Leaving South Korea to pursue an in-person program would hamper this goal and derail the career trajectory I have built here. Accordingly, the online nature of MCIT will allow me to continue working in my current position while pursuing this degree. Having taught myself various subjects throughout the years, I am confident that I have the drive, motivation, and responsibility to complete the courses in the program. In my current position as a teacher, when not actively teaching classes, I have 15 hours of downtime each week, and I spend approximately an hour or two hours an evening on coding-related MOOCs. If admitted to MCIT, I plan to incorporate the rigors of the program with my lifestyle by taking no more than two courses per semester, dedicating my downtime at my current place of employment to my studies, and replacing the time I spend on MOOCs with MCIT coursework. Furthermore, I plan to engage with peers through the various means of communication MCIT uses, and indeed, an admitted student and I have already helped each other work through some of the problems in the MOOCs offered by Penn Engineering.

I have long believed that if I can share my own good fortune with just *one* person in need, then everything I have worked so hard to achieve will have been worth it. The skills I will have acquired through MCIT’s curriculum will allow me to not only expand opportunities to *one* person, but potentially *thousands*, and I hope I will be given the chance to do precisely that.