Nguyen Le Hung – Personal Statement

Dear Madam/Sir,

My name is Nguyen Le-Hung, a Software Engineer in Samsung Vietnam Mobile R&D Center (SVMC). I would like to express my strong determination in pursuing the **Combined Master's and Doctorate degree course** at **Department of Electrical/Electronic and Computer Engineering - University of Ulsan (UOU)**. It is my desire that, through these few words, I will be considered to be a worthwhile candidate for the admission and scholarship.

Throughout the journey of study, I always maintain my aspiration based on the passion for Telecommunication system. Additionally, I am keen on acquiring and diversifying my knowledge and experience to contribute to my country in the future.

When I started pursuing the Bachelor course in University of Engineering and Technology (UET) – Vietnam National University, Hanoi (VNU), I had not had the clear and accurate vision of what I want to pursue. I chose the major of Electrical Engineering because of my enthusiasm and curiosity for technologies, especially for the mobile communication devices. I often wondered how the signal can carry information and propagate in free space.

The course, which I attended at UET – VNU, Hanoi (one of the leading universities in Vietnam - http://www.topuniversities.com/universities/vietnam-national-university-hanoi), is designed with updated curriculum and meets the international standards. Due to the fact that the course is given in English, getting 6.0 IELTS certificate is one of the compulsory graduating requirements (I already got the 6.5 IELTS certificate since 2010).

Five years studying of Electrical Engineering helped me to gradually figure out the "big picture" of a simple Telecommunication System, from "Analog to Digital Converting", "Digital Signal Processing", "Base-band Signal Processing" to "Radio Frequency System"… I joined "Signal and System Laboratory" and finished my thesis about "Compressive Sampling using Chaos Filter" – a research, to reduce the sampling rate by using filters that are generated by the Chaotic sequences, which can be applied in fast image acquisition in Magnetic Resonance Imaging (MRI)…

At that time, I, to some extent, had a good overview of Wireless Communication systems, however, the knowledge that I acquired from academic world is mostly theoretical, simulating. Realizing that my lack of practical experience was a disadvantage, I decided to find a job in an industrial corporation. I attended the entrance examinations, interview and started working at SVMC.

In Vietnam, it is quite not an easy task for any fresh-graduated student to find a job which dates closely aligns with his or her background. Many students with telecom-based background often switch to application or object-oriented programming after graduating. My main aim, however, is to pursuit the field of Telecommunication engineering, hence, I begged my managers for an opportunity to discuss my background, abilities and enthusiasm. Fortunately, I successfully convinced them and then was assigned to **Department of Communication Processor (CP) System**. This department develops and maintains the Modem Processor for Samsung Android mobile communication devices (smart-phones, tablets...). There are several technical teams in this department, namely: CP Board Service Package, Radio Frequency (RF) driver, audio processing, Protocol stack, Radio Interface Layer, IMS server. I am responsible for the RF driver with the duty of developing, debugging, maintaining the modem, RF IC (RF Transceiver) and RF Front-End (Power

Amplifier Module, Antenna Switching Modules...) to ensure devices will run at the optimal performance. I have participated in many development projects of Android smart communication devices for South East Asia and Australia/ New Zealand regions. Through these projects, I acquired a great deal of hands-on experiences in programming, debugging for Embedded Modem. Furthermore, I had the chance to work on different baseband processors from popular manufacturers, such as: Qualcomm, Intel, Broadcom, Spreadtrum… and the solution developed by Samsung. Moreover, practical experience also assists me to fulfill my "big picture" of wireless communication system, how the algorithms are implemented, the structure and interaction between layers of a System-On-Chip (SoC), debugging techniques and tools like Trace32 JTAG...

In addition, in order to broaden my vision and knowledge, under the guidance of my manager - Senior Engineer Nguyen Minh Viet (PhD from KAIST), who had been working on modem Digital Signal Processing (DSP) at Samsung R&D in Suwon Campus for 5 years, I re-investigated the Turbo Coding, one of the most popular Channel Coding techniques which is currently used in LTE network.

Besides, working in a multinational corporation also helped me to acquire techniques and strategies for developing self-**discipline** and getting tasks done, which are definitely useful for future study and research.

After half a year of hard work, I earned trust from manager, colleagues and became the team leader of RF driver. We got involved in some projects with increasing difficulty, however, I always tried my best to accomplish the missions and support my teammates. I had the chances to attend several training courses in South Korea in April - 2014, December -2014 and May - 2015 in Samsung R&D center (in Gumi and Suwon Campus), with the topics about: "LTE Advance - Carrier Aggregation", "RF System" and the new modem solution of Samsung, respectively. These training courses not only improved my technical skills and experience but also gave me a new perspective on studying aboard. Previously, I had believed that receiving education in a developed country will bring me many advantages which will help me to find a job with high income. Nevertheless, my mind was changed after witnessing the positive work attitude of Samsung researchers. They are engrossed in working with passion, often go to office at 9 AM and leave at 9 – 10 PM. I understood that the success of Korea particularly, or developed nations generally, is based on sacrifice, relentless endeavor and efforts of many generations. Learning always demands a strong determination and is never easy.

Among my mentors, Mr. Hyung-Joon Yu (유형준 – hyungjoon.yu@samsung.com) - Senior Engineer in Samsung R&D Suwon, has carefully guided me in my research. He visited Vietnam once and commented that Vietnam is quite similar to South Korea in the past 20 years. My country is still a developing one and my fellows are living in low standard in comparison with the average level of the world. Vietnam's technology is still at the very first stage and there is a huge room for improvement. Consequently, I am more and more committed to my desire to gain profound and deep understanding of Telecommunication Engineering with an aim to make contribution to the development of my country. I am deeply convinced that Combine Master and Doctorate degree program at UOU is one of the best ways to achieve my future goals because of its high international quality and closely relevance to my academics expectations. I apprehend that I will be educated with excellent skills to be able to face challenges in Electrical Engineering field, for instance, contributing to developing the very first communication processor in Vietnam.

In conclusion, there is a quote from Anthony Campolo, which I always keep in my mind throughout my journey of study, "The purpose of an education is not to get a job in order to make the money to buy the stuff that you don’t need, the purpose of an education is to serve other people"

I am fully aware that pursuing higher education in University of Ulsan demands a high level of intelligence, endeavor and personal sacrifice. However, I am determined to overcome any difficulties to achieve my goal.

Thank you very much for your time and consideration.

Nguyen Le-Hung