I think respecting a chronological order would be the best thing to do in this case. I did my pre-university studies in Madrid, in the second generation under the excellence program of my local high school. After finishing the scientific-technological undergraduate bachelorship, I abandoned my aptitude for study medicine back then and decided to study a double degree with the idea of becoming an engineer.

Given the fact that the Polytechnic University of Madrid was the best public university in relation to engineering degrees, I opted for the path of software due to my interest in programming. Although I was offered different specializations during my years of degree, from the first year it was clear to me that I would specialize in mathematics applied to computing and so I did, choosing a minor in complex analysis.

To support this decision and pass my practical credits, I joined the international mobility program Magalhaes, and I studied advanced math courses at one of the most remarkable universities in Latin America: The Technological Institute of Monterrey in México. It is true that I could not obtain an economic benefit because I only had a student visa, nevertheless, I accepted the proposal of my teachers to give integration courses and give support to my classmates. Thanks to my commitment I had the opportunity to contribute to an active research project as part of the support team of a neural network in deployment. Although I did not participate in the design of the network, my team contributed to optimize its training.

While I was going through a stage of personal growth, I took the opportunity to study some minor certifications on my own, such as: photography, cinematography, psychology and music. In retrospect, I can now see that these courses did not leave me all the time necessary to achieve excellence in all the subjects at the university, but I don’t regret it. I don’t remember enjoying learning so much, studying for knowledge itself rather than as a mean for an end, and complementing my mandatory itinerary with new horizons.

I finished my two university degrees by presenting my two final projects, getting the maximum qualification in both and being published in the archive of the faculty. I included both abstracts as extra documents in this application, however, I will briefly reference the theme of each one since I am truly proud of them:

One is dedicated to pure mathematics, encompassing a deep study of one of the most well-known functions in complex analysis: The Riemann Zeta Function. I studied the demonstration for its functional equation and its close relationship with prime numbers. As an attempt to make this technical and complex prove a little bit more accessible for an engineer profile not specialized in mathematics, I complemented it with a web application which helps with the visualization of some complex formulas.

The second one, counting on the given success of the first, was undoubtedly more personal: the resulting miracle of merging a previous inspiration during my studies abroach and the most famous cellular automaton. I studied the possible application of the Conway’s Game of Life as a music visualizer, a mainstream tendency right now in aid of the hearing-impaired community. I programmed from scratch the traditional game, relating each state with notes, chords or rhythmic beats. This transformed a gifted with satisfying visual mosaics zero-players game into a visualizer capable of compose music. As a conclusion of the work, as well as a veiled ode to the group that saved me during some hard moments, I modeled the hit Shutdown of BLACKPINK using my own implementation of Conway’s Game of Life.

I think I will have to wait for the personal essay to be able to abstract myself and avoid a summary of my curriculum and educational background. From my point of view, I guess shared by many companies, applied mathematics is often an area of specialization very interesting for an engineer. Many projects in the IT sector require such a profile and inclination in design.

From the ingenuity and vocation typical of a young person, it is my intention to seek improve people's lives by finding solutions to problems and developing innovational projects. That is why my first work experience was joining one of the most important ICT companies in the sector in my country: INDRA. Within the multiple divisions of the company, I entered Transport, specifically in the mobility brand. Developing projects for urban and interurban transport from the Department of Technology and Software Architecture.

My desire to continue with my postgraduate studies was undeniable, but the truth is that subconsciously none of the options I considered were quite attractive. It was at that moment when, following the advice of one of my closest and most cherished mentors, I reinforced the idea of studying abroad. I dare to insinuate that the fact that months prior to this decision I was already studying Korean on my own clearly inspired by the “*Korean Wave*”, is no coincidence at all.

My decision to apply to the Computer Science and Engineering department in the College of Engineering, given this background and my expectations, seems sufficiently explained to me. It is true that I considered Data Science as a plausible option, but after investigating the courses and subjects more closely, I couldn't help but accept that my first choice was the best one. I don't think it's overly flattering saying that the department of my choice is a perfect path for my plans of future, as well as encompassing the idea of building bridges between software engineering and my major in mathematics.

Rationalism:

When I was little, I had a hard time talking. I learned to read faster than most, but for some reason I was not able to utter a word, especially with strangers. My parents understood later that I was discreetly learning, but I wouldn't dare speak until I could do it perfectly. Such was my attitude towards failure and frustration. Once I considered that my skills were up to par, I exhibited stuttering and lack of fluency. My mind worked too fast, and lack of practice condemned me to not being able to say everything I wanted.

A few years later, already at school, while my classmates played pogs with each other I was almost always alone, reading Nietzsche or history books. I often went to the psychologist tormented by irrational adolescent fears while continuing to work with my speech therapist.

My psychologists at the time recommended special measures appropriate for a gifted child, but then I met Mr. S. My teacher for the next two years, and my mentor for the next ten. He refused any favorable treatment, and forced me to integrate with my classmates, teaching me that everything happens for a reason and transmitting the scientific method to me. From that point forward I developed the need to explain my surroundings, solving mysteries and exhibiting an excessive interest in self-taught and erudition.

Nihilism:

Knowledge condemned me in my stage of adolescent rebellion, because the sequels of my social isolation were combined with low latent inhibition. Condition that made me prone to be more receptive to stimuli from my environment, processing too much visual and gestural information and finding natural patterns. It was difficult for me to leave my trusted boundaries, the more people around me the more likely I would be overwhelmed and the more knowledge I acquired, more data was accessible to me, which aggravated the problem.

My solution was another double-edged sword: downplaying people and situations. If nothing mattered too much, there was no need to blame myself, and the failure was completely eradicated. It was my most depressive and dark stage by far, because I was not capable of rejecting extremism and looking for a less radical option. Despite that even my mentor was already very old and had developed health problems, it was not a hopeless scenario.

During this time, I learned not only to accept myself but also to feel proud of myself, gradually restoring importance to certain things relying on music composition.

Vitalism:

Relatively recently, I proudly have overcome my socializing problems and my depressive cycles due to existential issues. By accepting that perfection is unattainable, it is impossible but at the same time it is right in front of us constantly. I realized that it was not just a matter of surviving but to make the most of my possibilities: life as a criterion of absolute value and universal value.

A few weeks ago, I went to the hospital to visit Mr. S. I cannot explain how it is possible that in early dementia he would be able to challenge me to chess, like we used to do when I was a kid. I emotionally thanked him for saving me and listened to his advice for the last time. I should not be merely an engineer, but I had to self-attribute the role of promoter of change, using my skills and my talent to help other people: "Open a map and tell me where the frontier of technology is, because there is where I want you to go".

Out of the three chess games of our last match, two of them ended in draws, and against all odds, I lost the last one playing with whites being unable to respond to his Sicilian, reinforced with the experience of a lifetime. Declaring myself defeated, he transmitted to me what his dream was and commissioned me to realize it. I remember leaving with the outline of what would be my plan to study in one of the most advanced countries in technology, my journey and challenge embracing a new culture, language and possibilities in South Korea.

My intention is, as long as I don't have to work in parallel, to take as many courses as I can at each semester focusing exclusively on the master during my stay in Korea. While I retain and employ algorithm-related concepts daily, it is true that it is a subject that I am passionate about, therefore I would look forward especially to the courses of Artificial Intelligence, Parallel Processing or Real-Time Systems.

On the other hand, it is easy for me to admit that I would have liked to study some specific topics, which unfortunately were left out of my degree's itinerary. Being totally two degrees closely related to software, I missed certain practical applications around hardware. If I feel ready, I would love to accept the challenge and excel in some courses of the program following this criterion, such as Optical Information Processing, Semiconductor devices or Advanced Programming Methodology, where I believe my mathematical expertise can shine.

Given my usual investigative inclination, I'm sure I'll manage to participate somehow in research projects. I would be happy to offer my help without any profit motive if that opportunity is offered to me. But this possibility will be totally linked to my learning of the Korean language. Living there, I will surely learn better and faster the language, so among my plans is also to certify my level of Korean after some months.

In order to take advantage of the knowledge after the master, it is interesting that INDRA has headquarters and projects in South Korea. With my curriculum and my previous experience in the same department of the company, it seems appropriate to start by continuing my path in this sense. Whether this idea comes to fruition or not, becoming a top-level engineer and working for a global ICT company from Korea is my main goal right now.

Located in one of the capitals most advanced in technology in the world and being an international exponent in terms of education for postgraduate students, I believe that my interests fit very well with the Seoul National University’s characteristics and idiosyncrasy. It would be an honor for me to continue my studies there.