Personal Statement

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Creating a service that improves the quality of life of others is a goal that I've had for years.

I've had this dream vaguely since high school, but it became concrete during my military service. I started learning programming from another soldier during my spare time. I started from making a Tetris-like game with Python and exploring other programming languages and technologies. One day, I encountered a nationwide programming club recruitment called "Likelion" during the military service and prepared for it. After getting selected as a member of the club, I took a year and a half off from university to grow the club and focus on numerous projects such as web, game and app development along with data analysis research.

During the break from university, I mainly worked and taught as a web developer. Among many projects, "Classlion," a website used for rating university courses, was definitely the most valuable project in my life. It was also a project that was meant to have powerful support and funding by the owner of the largest programming education organization in Korea. I was chosen by him to compose a four person team, as a form of internship. I learned how difficult it was to create a fully functioning website with user authentication and search module functions from nothing. However, communicating with the owner who was not interested in the project was the most challenging part. Even though he was the one who requested this project, he was busy taking care of his other projects. In the end, our team was finishing up the website with full features in an uncertain environment like a dense fog. It was extremely difficult to overcome the disappointment from six months of effort returning nothing. I did get to experience how a full-feature website is constructed with the harmony of various technologies. More importantly, the experience of composing and leading a team was so valuable since I know how to lead a research project in graduate degree courses. I loved this project above any other but at the same time had the most trouble with it. This project made me promise myself, one day I will create a meaningful service to help and directly impact a larger population of users.

As I was hunting for various hackathon opportunities, game development caught my highest feelings of enthusiasm. Although game development required the most difficult and diverse programming skills, I never gave up in front of those hurdles. I participated in Game Jam by Smilegate in 2016 and met wonderful teammates that I continued to work with for two more years. During the three days of hackathon, we created a demo version of a puzzle game called Nabla(∇) using Unity and its physics engine and were chosen as top 3 among other competitive games. Since

we were awarded, we tried to find workspace and monetary support to continue the project. However, there was no help for an indie-game team without a great resume. We continued to finish developing the game, using our spare time at night and own money. We published the gmae to Google Play Store. Although this did not end up becoming a hit game, this experience allowed me to feel how harsh the indie-game development field is and at the same time how a person's passion can overcome this environment. This experience shows how I can adapt to a new environment and achieve a concrete goal. I firmly believe this experience will be extremely helpful for promptly settling at a new environment and producing research materials at Indiana University's graduate school program.

Getting awarded at the game jam connected me to get an internship opportunity at Smilegate, one of the largest game developing companies in South Korea. I was assigned with miscellaneous work to improve the company's platform project along with other interns. I proved that I can produce more than the company anticipated from interns by handing in extra work such as natural language analysis on Twitter and crawling and producing statistics from YouTube, Google, and other relevant sources. Therefore, I had the opportunity to lead employees and interns to support my work. I managed and balanced leadership responsibilities as well not breaking apart team structure and hierarchical order. The internship experience helped me suggest a data analysis start-up at Amazon Web Service (AWS) hackathon called Omnisian.com. I was awarded by AWS for wonderfully applying AWS services to my project. Internship and AWS hackathon, made me feel if I was given an opportunity and time to further expand my skills and knowledge in this field, I can innovate new method of informatics research and ultimately improve human life quality.

To accomplish the dream that I had, which was to create a service that improves people's lives, I started SKKOOLBUS, a bus tracking app for my university, Sungkyunkwan University. I had many challenges with this project: reforming the team twice, funding issues, convincing school employees for getting access to the bus GPS API, and mostly technical issues. The goal was to provide not only the bus tracking but also the real-time expected arrival time. I was tempted to stick with a fixed-value for the arrival time, but I made this app to calculate it real-time in the server. I still manage this app and currently am preparing to promote the app to freshman students that enter Sungkyunkwan University this coming March. Among all the other projects, this is definitely the most successful one considering that it has 6000+ downloads and fully functions without a technological issue. I could settle in this accomplishment and not touch this anymore. However, during my degree at Indiana University, with the skills acquired at the program, I am planning to upgrade its performance by implementing real time deep learning on predicting the arrival time.

Also, I plan to show a sentence created with the weather, atmospheric condition and traffic data to help users begin their day.

I have a well-suited background in informatics. I was chosen as a dual degree student to earn two bachelor's degrees from Indiana University and Sungkyunkwan University, Korea. I chose to major in economics and minor in informatics to pursue research in informatics. During my sophomore year, I was awarded grand prizes in both researches with topics such as "[Korean legal cap on phone subsidies](#)" and "[indie-film audience prediction](#)" at Sungkyunkwan University's informatics research competition. These researches both focus on deriving economic insight with data collected on my own. I definitely am ready to continue and produce more practical results at IU's informatics graduate program.

My latest research focused on optimally "[visualizing regression data](#)" from [Data Visualization Course](#) by [yy](#). It was in continuation to formal research on "[indie-film audience prediction](#)", to improve its academic value. The original research solely focused on regression and concluded that domestic movie enthusiasts' opinions and foreign index was not significant in predicting the size of audiences of indie-films that are imported to Korea. It also revealed and discussed how other variables impacted the regression model. In addition to the visualizing part, it elaborates the effect of genre being an "Animation" on other variables and the size of audience members.

Although above researches all hold their own academic value, I felt academic thirst that I need more skills and knowledge to produce more impactful results. I would like to perfect myself with the curriculum offered at the Informatics Master's program at Indiana University, participating in research such as "statistical arbitrage via news sentiment data analysis" considering my interest and domain knowledge. I am also highly interested in researching social media to improve people's life. INFO-I 606 Network Science by [yy](#) can be a perfect course to achieve my life goal and I have heard about the course from [yy](#) at his office that it is also his main research interest.

I learn materials that I enjoy studying faster than any others and can produce meaningful results that stand out. Specifically, my creations such as [shuttle bus tracking app](#), high-quality [game](#) using a physics engine, fully functioning websites were all mainly based on self-taught skills. Moreover, I am equipped with domain knowledge of economics and diverse programming skills that suit the need of informatics program research at Indiana University. I believe that my research experiences regarding data analysis and my unique background can make a significant and positive contribution to the research currently being conducted at the informatics program of Indiana University. I very much look forward to starting my research career at Luddy, Indiana University.