

SUMMARY

I aim to be a data scientist and bring improvements to society by utilizing data. I am applying for this program to enhance three core skills needed for me to achieve my goals: designing machine learning (ML) systems, data analysis, and software engineering. The core courses, Machine Learning and Deep Learning in Data Science, will train me to design ML systems and implement appropriate ML algorithm. Further, in the Big Data Analytic Project, I can enhance my knowledge in analyzing data. Lastly, the practicing and implementation in all courses can help facilitate my skills in software engineering. The training in this program can achieve not only my short-term goal of becoming a data scientist, but also my long-term goal of utilizing data to bring benefits to the society.

Moreover, the Innovation & Entrepreneurship (I&E) Minor in this program attracts me a lot. By this minor, I will have the ability to use knowledge, ideas and technology to create new products, services, new business models or jobs. Also, I will have the chance to collaborate with people in diverse backgrounds. Therefore, this training will not only enhance my innovation skills, but also make me become a great communicator or an outstanding leader.

I honed my mathematics skills in my previous study in Physics, including the related courses: calculus, linear algebra, differential equation, and complex analysis. On the other hand, by completing the minor degree in computer science (CS), I obtained not only the fundamental knowledge and background of CS, but also solid programming skills. Among the CS-related courses, the course- Machine Learning (ML) impressed me a lot. I acquired plenty of basic knowledge in ML, including Regression, Convolution Neural Network, Semi-supervised Learning, and Unsupervised Learning. I even tried to complete assignments by using Tensorflow, Keras, PyTorch, etc. We implemented a R-NET model in the final projects, and our group got Top10 rank among 80 groups on Kaggle competition.

To go deep further into Data Science, I took the course -Special Research- which lets students use the computing resource provided by Communications & Multimedia Laboratory to implement the research project. My project topic was about using a GAN model to achieve photo-realistic single image super-resolution. This course not only makes me learn more about using GPU to train models, but also motivates me to focus on Data Science. I have continued to learn skills and acquire knowledge in the sector of Data Science. Therefore, I have enrolled in the career track, "Data Scientist with Python" on the Data Camp website, and have completed 58% of the track.

My entrepreneur idea is to launch a unique dating application that help people match efficiently. I'll use technique of data science to help users find the most suitable companion. The application will judge the matching by using the proper model to analyze the users' data, and then select the right person for users. For example, by realizing the users' hobby of seeing movies, the app will choose the person who likes similar kinds of movie for the users. Moreover, by using the technique of data science, such as classification, machine learning for decision, natural language processing, we will make users have satisfactory decision. As for the details, I will explore more in the next page.

The Data Science program is meant to help people extract knowledge from large amounts of data. To achieve my career goals of becoming a data scientist, of using data to bring revenue and positive impact, or even of achieving my entrepreneur idea, I need three core skills: designing ML systems, data analysis and software engineering. Also, the Innovation & Entrepreneurship Minor will make me remain competitive. These are the reasons I am applying to this program. With the training this program offers, I am convinced that I will succeed in acquiring a data scientist position upon graduation.

ENTREPRENEURIAL IDEA

In a highly developed-technology and multicultural society, we can simply use dating apps to meet people and date with somebody. However, we sometimes encounter embarrassing situations when meeting someone incompatible. A few examples are as follow: meeting someone terribly boring, and cannot communicate with him/her; feeling embarrassed because having no common hobbies or shared topics to chat; or, for LGBTQ or people of certain religions, they may meet people with different views or different religions. Therefore, we need a better, appropriate, and efficient application to deal with these problems.

I would like to develop a new application called “Moviematch” by applying the techniques in Data Science. It can be a website application or a smartphone application for both Android and iOS. This is a dating app but also combining one’s interest in movie. It will ask users to pick their preferred genres for movies and will match people that have the same preference. Furthermore, the app would recommend movies that are out of theaters or in theaters in that genres. For movies that are out of theaters, users can chat with each other about the movies and share experiences and the most impressive parts in the movies. As a result, by finding the common genres between users, this can solve the embarrassing situation when people just get match and don’t have same topic to chat on. On the other hand, for movies that are in theater, users can hang out with each other to see a movie the application recommends. This will provide users a better experience in using this dating app, moreover, benefit the relationship and find their soul mate more efficiently.

On the theater company side, the application could help them realize the users’ interest. Also, the system of recommending movies in our application would increase the potential customers for them. Moreover, by analyzing the users’ interest and their habit of seeing movies, we could provide theater companies with comprehensive strategy to attract more customers.

On the application side, we can obtain profits by charging app’s users with an acceptable fee, or by providing the theater companies with data of users’ tastes of movies. Moreover, we can collaborate with the theater companies to offer discount to the people matching in the app. This way, theater companies can get more customers; users can enjoy movies with lower prices; we can also get some commission from theater companies. As a result, these profitable ways can help us maintain the quality of application and support the subsequent updates.

Nowadays, there are lots of dating applications on Google Play and iOS App Store that offer users to date with someone or meet new friends. The matching mechanism in most of these applications is swiping right for like and left for no by browsing other users’ photos and brief profiles. This could potentially let user make the wrong decision since one cannot truly know other users’ interest by this matching mechanism. Actually, I have experience on using these apps. However, I found them inefficient because I can hardly meet the right person who has similar hobbies and common views as me. Our app can reduce these mistakes by using machine learning models to classify the similar and compatible people and to predict the best decision for each user. I am convinced this will provide a new way to meet the right person compared with the previous applications.

We aim to provide this app to customers who have tried other dating apps and were not satisfied with the inefficient matching. We will provide a new way for people to find their soul mate, and with the efficient matching, this will be popular for people who are single. Furthermore, this will provide movie theater to understand what customers enjoy. This will be a beneficial application, not only for us who designed the app, but also the society. I am optimistic that this will be a great success in the market.

Data science plays a significant part in this application because the difference between traditional apps and this app are the use of machine learning models, analyzing the users’ data and the movies recommending system. Most operations in this app require the technique of data science, so that’s why this will be unique one in the dating apps market. Therefore, from EIT’s data science program, I wish to enhance the solid skills and comprehensive knowledge in data science in order to develop this application. Also, from EIT’s I&E minor, I will have the opportunity to implement this innovative idea with people in diverse backgrounds. These are the reasons why EIT’s data science program will be my first preference.

Thank you for your consideration.