**Reflection Essay**

Data science skills are in demand because they can be used to improve various work processes in different professional spheres. Education is no exception here – the course on educational data mining can give students important insights on data manipulation for the alteration of teaching and learning as well as the whole educational system. When I joined this course, I had no previous knowledge of data analytics. My expectation was to learn how to work with the R language, particularly its syntax, operators, and functions. Having no related background, I had a goal to understand the implications of data science for educational practice and start coding independently. Looking back at the course, I can confidently admit that my expectations and goals have been entirely met even though I struggled a lot.

Academic databases are a precious source of hidden knowledge. Within one semester, I learned how to locate data in a database and formulate my inquiries in R language based on the problem I am trying to solve. Setting up R studio and becoming comfortable in that working space was the first step towards my coding practice. Next, I got an overview of various software packages and their practical usage. I memorized how to use the relational and logical operators, organize and transform the data. Furthermore, I was introduced to the world of predictive analytics and tried myself at classification and regression modeling. Frankly speaking, this particular part was the most challenging in this course because it requires both technical mastery and an analytical understanding of complex relationships between variables. I approached this challenge by setting a strict study-and-rest schedule so that I could find no excuses when it came to concentrating on regression modeling and related topics. On the contrary, the clustering technique was easier to understand and apply. The combination of complicated and painless topics was a good balance to navigate the curriculum effectively.

For me, the biggest takeaway from this course is the tidyverse library manipulation because I will be able to use its packages for multiple purposes even if the data assignments given to me will not be directly related to educational data mining. As it is a standard library for many data analysts, it encompasses many tools I can use for work. I especially enjoyed producing data visualizations with the help of tidyverse – even when the workflow was a little monotonous, it was exciting to see the visual result and feel the happiness of a small accomplishment. I am planning to continue exploring data visualization functions in more detail even after the semester is over.

Ultimately, I have achieved my learning goal because I know the basics of coding and how it can be used for educational research and data analysis. The classes increased my curiosity about this topic because the environment was learning-friendly and creative discussions were encouraged. Using the course techniques can help me with the analysis of student information, identification of priority learning needs for different age groups, evaluating general institutional performance, and optimizing the curricula. As compared to the beginning of the semester, I feel that I advanced significantly in terms of data interpretation and manipulation. The skills I gained are invaluable as they make it possible to extract the most important information on educational processes through a set of commands. Moreover, it is great that many of these methods are applied not only in education but also in business and the corporate environment – this expertise might be a substantial addition to a cover letter during a future job search. Overall, it was a challenging but incredibly useful course, which made me believe that I can master any domain of knowledge if I dedicate enough time and effort.