Introduction

Data analytics is a core competency within the MSCIS program, bridging raw data and actionable insights. Through CIDM 6308: Seminar in Data Analytics and CIDM 5310: Business Intelligence and Decision Support Systems, I gained both theoretical grounding and practical application in statistical methods, visualization, and modern AI-driven decision support. This assessment highlights my strengths, areas for improvement, and readiness to apply this competency in my capstone and professional career.

Strengths and Skills Developed

CIDM 6308 introduced me to supervised and unsupervised learning, including regression, logistic regression, decision trees, and clustering. I practiced data preparation and integration through SQL, Excel, Tableau, and RapidMiner, and used DataCamp modules to strengthen my technical skills. These tools helped me move beyond theory into applied analysis and visualization for business decision-making. CIDM 5310 built on this foundation with applied programming. I developed Python proficiency, working with Pandas for structured data, APIs for data extraction, and Streamlit for building interactive applications. The course emphasized AI applications, culminating in a final project where I created a Streamlit chatbot powered by an LLM API. Together, these courses balanced statistical reasoning, visualization, and software development, preparing me to analyze and communicate insights effectively.

Weaknesses and Gaps

While I am confident in core methods, my exposure to advanced machine learning, such as ensemble models and neural networks was limited. I also have less experience optimizing Python for large-scale datasets and deploying BI solutions in enterprise environments. Time-series forecasting was only briefly introduced, leaving me less confident in applying it to real-world business problems. Finally, while I experimented with LLMs, I need deeper understanding of fine-tuning and ethical governance for production use.

Supporting Evidence

My work demonstrates applied competency. In CIDM 6308, I completed SQL integration exercises, Tableau dashboards, and regression/classification models. In CIDM 5310, I created Python notebooks for structured and unstructured data, built data apps with Streamlit, and developed a chatbot using an LLM API. Supporting resources included *Data Science for Business* (Provost & Fawcett), Dr. B's *Social Science Research*, and practice platforms such as DataCamp and SoloLearn. These reinforced course material and extended my learning.

Integration and Application

My SQL and integration skills overlap with Data Management, Python application development links with Software Systems, and ethical considerations in handling data align with Cybersecurity. Professionally, these skills apply directly to sales leadership

and higher education consulting. For example, I can use analytics to examine student retention trends or design BI dashboards for executive decision-making.

Preparedness for Capstone

These courses prepared me to conduct independent analysis, create interactive business applications, and explore AI integration in decision support. While I still need growth in advanced methods and deployment, I now have the foundation to extend my learning in the capstone. This competency will allow me to demonstrate both rigorous analysis and innovative application in my final project.

Conclusion

The Data Analytics competency has provided me with a versatile skill set, spanning modeling, visualization, Python programming, BI, and AI applications. I am confident in my ability to analyze and communicate insights while acknowledging areas for continued development. As I move into the capstone, I see Data Analytics as both a strength to showcase and a foundation for further exploration in advanced analytics and applied AI.