AGILE DATA SCIENCE AND ITS RELEVANCE IN IT & COMPUTER SCIENCE

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ABSTRACT


I. INTRODUCTION

Agile data science is an emerging approach that combines the principles of agile software development with data science methodologies. It focuses on the iterative and collaborative nature of data science projects allowing for flexibility and adaptability in the face of evolving requirements and rapidly changing data landscapes. This paper aims to explore the relevance of agile data science in IT and computer science education highlighting its benefits and potential challenges.

Benefits of Agile Data Science in the Classroom:

- Enhanced Collaboration: Agile data science promotes cross-functional teamwork and collaboration mirroring real-world project environments. Students working on data science projects in an agile manner gain valuable experience in collaborating with diverse team members improving their interpersonal and communication skills.

- Adaptive Learning: The iterative nature of agile data science allows students to learn from their mistakes and quickly adapt their strategies. This promotes a growth mindset and encourages students to experiment with different approaches leading to a deeper understanding of data science concepts and methodologies.

- Real-world Applications: Agile data science emphasizes the practical application of theoretical concepts. By working on real-world datasets and solving authentic problems students can bridge the gap between theory and practice gaining hands-on experience that is highly relevant in today’s data-driven world.

- Agile Project Management Skills: Agile data science projects require effective project management skills such as task prioritization, time management, and progress tracking. By incorporating agile methodologies in the classroom students develop essential project management skills that are transferrable to various IT and computer science roles.

II. CHALLENGES OF IMPLEMENTING AGILE DATA SCIENCE IN EDUCATION

- Limited Resources: Agile data science projects often require access to large datasets, computing resources, and specialized software tools. Educational institutions may face challenges in providing these resources limiting the scope and complexity of agile data science projects in the classroom.

- Time Constraints: Agile methodologies rely on short development cycles known as sprints which may be challenging to implement within the constraints of a semester-based academic calendar. Allocating sufficient time for each sprint including data collection analysis and interpretation can be a logistical challenge for educators.

- Technical Skill Requirements: Agile data science requires a strong foundation in programming, statistical analysis, and data manipulation. Students with limited technical skills may find it challenging to fully grasp and apply agile data science methodologies necessitating additional support and resources.

- Data Privacy and Ethics: Working with real-world datasets raises concerns regarding data privacy and ethical considerations. Educational institutions must ensure that students are aware of the ethical
implications of data science including obtaining appropriate consent anonymizing data and complying with privacy regulations.

III. CONCLUSION

Agile data science offers numerous benefits for IT and computer science education. By incorporating agile methodologies in the classroom students gain valuable skills in collaboration adaptability and project management. However challenges such as resource limitations time constraints technical skill requirements and ethical considerations need to be carefully addressed to ensure the effective implementation of agile data science in the educational setting.

IV. REFERENCES


