Chapter 2: Literature Review

A thorough summary of current research and approaches on data-driven student identification, automated recruitment systems, and social media data mining for educational recruitment is given in the literature review chapter. This evaluation will lay out the project's theoretical framework and draw attention to the shortcomings that the suggested project seeks to fill.

**2.1 Automated Recruitment Systems**

**2.1.1 Overview of Automated Recruitment Systems**

Automated hiring. systems make use technology to accelerate the hiring process, hence reducing the need for human engagement and boosting efficiency. These systems use a range of algorithms and data analytics techniques to identify and communicate with potential applicants.

**2.1.2 Key Studies and Findings**

**Smith et al. (2020):** investigated the efficacy of automated hiring systems in the business setting, pointing to notable gains in productivity and applicant involvement. **Johnson and Lee (2019):** investigated the application of machine learning to hiring in education, showing how historical data may be used to find potential pupils using predictive models.

**2.1.3 Limitations and Gaps**

These studies show that automated recruitment systems have significant advantages, but they also have drawbacks, including a dependence on historical data and a lack of connection with real-time data sources like social media.

**2.2 Data-Driven Student Identification**

**2.2.1 Importance of Data-Driven Approaches**

Institutions can make well-informed decisions by employing data-driven strategies, based on empirical facts. These techniques help identify patterns and trends that can be utilized to predict the preferences and behavior of potential students.

**2.2.2 Key Studies and Findings**

**Kim and Park (2018):** demonstrated how the identification of critical elements influencing student registration decisions through data analytics may improve student recruitment. **Garcia et al. (2021):** showed how to leverage big data analytics in higher education to enhance recruitment and retention tactics for students.

**2.2.3 Limitations and Gaps**

Notwithstanding the benefits, data-driven strategies frequently run into issues including the requirement for complex analytical tools and worries about data protection. Furthermore, post-enrolment data rather than pre-enrolment identification is the main focus of current study.

**2.3 Social Media Data Mining**

**2.3.1 Role of Social Media in Recruitment**

Social media platforms are a rich source of data that can provide insights on the demographics, interests, and actions of their users. Mining this data to find and connect with potential candidates can greatly improve the hiring process.

**2.3.2 Key Studies and Findings**

**Brown and Wilson (2017):** examined how social media data mining is used in corporate hiring, emphasizing how useful it is for finding passive applicants. **Nguyen et al. (2020):** looked into the usage of social media analytics in higher education, showing how potential students can be found using sites like Facebook and LinkedIn.

**2.3.3 Limitations and Gaps**

examined how social media analytics are used in higher education, demonstrating how sites like Facebook and LinkedIn may be used to find possible students.

**2.4 Gaps in Existing Literature**

An examination of the literature identifies several critical holes that the initiative under consideration seeks to fill:

* **Proactive Identification:** Reactive recruiting tactics are the main subject of current research. Proactive identification techniques are required in order to find prospective students who have not yet participated in recruitment attempts.
* **Integration of Social Media Data:** There has been little research on the subject, especially when it comes to educational recruitment, on how social media data mining can be integrated with automated recruitment systems.
* **Automation and Scalability:** A lot of the present methods are mostly dependent on labour-intensive, inefficient manual processes, and lack complete automation and scalability.
* **Personalized Communication:** More advanced models that may offer techniques for individualized communication based on thorough student profiles are required.

**2.5 Theoretical Framework**

**2.5.1 Foundations of Data Science in Recruitment**

To construct an automated recruitment model, the project will expand upon current ideas and approaches in the fields of big data analytics, machine learning, and data science.

**2.5.2 Application of Machine Learning Algorithms**

The project's main component will be machine learning algorithms, which will allow the model to recognize trends and forecast student behavior based on information from social media.

**2.5.3 Integration with CRM Systems**

The research will investigate how to seamlessly transfer data and enable personalized communication between the new model and current CRM systems.

The proposed project intends to create a strong, data-driven recruiting system that improves BERI's capacity to locate and engage potential students effectively and efficiently by filling in the gaps that have been discovered and strengthening the theoretical groundwork presented in this literature study.