

Research Proposal

Deep Learning-Based System for Automated Retrieval of University Examination Notifications and Personalized Student Alerting Based on Arrear Analysis

1. Introduction

University students frequently rely on university websites for updates about regular and supplementary examinations. However, due to inconsistent formats, late uploads, or lack of a central notification system, many students—particularly those with arrears—fail to receive timely updates. Deep learning, particularly in NLP and document analysis, offers a promising solution for automating this process and delivering personalized alerts.

2. Problem Statement

There is no intelligent system that automatically retrieves exam notifications from university websites and maps them to individual students based on their arrear history. Manual tracking or static rule-based systems fail to deliver timely and relevant alerts to students.

3. Aim of the Study

To develop a deep learning-based system that extracts university exam notifications and delivers personalized alerts to students according to their arrear records.

4. Objectives

- Develop a web scraping system to extract exam notifications.
- Use deep learning models to classify and extract key data from notification content.
- Build a student profiling model to map arrears to exam eligibility.
- Implement a personalized alert system.
- Evaluate system accuracy, efficiency, and usability.

5. Methodology

The project will involve:

- Data collection from university websites and student academic records.
- NLP using models like BERT for notice classification and data extraction.
- Deep learning-based OCR for PDF/image notices.

- A DNN or LSTM model for mapping student arrears to notice eligibility.
- Deployment of a notification engine and evaluation using metrics like precision, recall, and student feedback.

6. Significance of the Study

This system aims to reduce the number of missed exams by providing timely, relevant alerts. It integrates state-of-the-art AI technologies into a scalable solution that can be adapted by universities to improve communication and academic planning.

7. Expected Outcomes

- An automated pipeline for notice retrieval and classification.
- A student-specific recommendation system.
- A functioning prototype tested with real or simulated student data.
- Research publications and a framework adaptable across universities.

8. Conclusion

This research will bridge the gap between unstructured university data and personalized student outreach using advanced AI. By leveraging deep learning, the system offers a novel approach to academic communication, ultimately aiming to improve student outcomes and operational efficiency in higher education.