Project ID: 46

Project Title

Ai-Assisted Moderation System For Improving Marking Consistency In Qualitative Assessments

Client Name

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Group Capacity

1 groups

Project Background

Qualitative assessments in large courses often face challenges of inconsistency, with markers applying varying levels of leniency or harshness, which can lead to student dissatisfaction, inequity, and additional workload for coordinators who must manually moderate results. This project addresses these issues by developing an AI-assisted moderation system designed to enhance fairness, transparency, and efficiency in marking. The system will leverage exemplar coordinator assessments and past best practices to generate clear marking guidelines, benchmark markers' performance, and produce moderation reports that reduce the need for manual adjustments. Its goals are to improve the student experience through equitable assessment, support staff by streamlining moderation processes, and provide structured resources to train new demonstrators.

Project Scope

The scope of this project is to design, implement, and pilot an AI-assisted moderation platform that directly supports qualitative assessments in large courses with multiple markers. The system will be trained on coordinator-marked exemplars from CVEN9723, CVEN9513, and CVEN9051, ensuring alignment with existing academic standards while anonymising student data for compliance. Its functions will include generating structured marking guidelines, benchmarking demonstrator marking against coordinator expectations, and producing transparent moderation reports that highlight consistency patterns. The pilot will involve small-scale deployment with selected demonstrators, accompanied by training on interpreting AI outputs. Key deliverables will be a working prototype securely hosted within UNSW systems, documented moderation frameworks, pilot evaluation reports, and dissemination through seminars and publications, with the long-term aim of enabling school-wide adoption and integration into UNSW-supported platforms.

Project Requirements

The AI-Assisted Moderation System will be developed as a software tool designed to improve marking consistency and transparency in qualitative assessments across large courses with multiple markers. The following requirements define its features and

specifications: 1. Data Management and Compliance: - Ability to import past student submissions and corresponding marking records in bulk. - Anonymisation of student identifiers to comply with UNSW data governance policies. - Secure storage of datasets and models in a UNSW-approved hosting environment. 2. Marking Guideline Generation - Use coordinator-marked exemplar assessments and prior-year marking practices as training data. - Automatically generate structured marking guidelines in natural language, highlighting key criteria, performance levels, and exemplar feedback. - Provide exportable marking guideline summaries for use as demonstrator training materials (e.g., PDF, HTML). 3. Consistency Benchmarking - Benchmark demonstrator marking against coordinator standards. - Identify patterns of leniency, harshness, and inconsistency through statistical and AI-based comparisons. - Visualise benchmarking results with clear dashboards (e.g., consistency scores, variance charts). 4. Moderation Reporting - Generate AI-driven moderation reports that flag discrepancies between markers. - Reports should include evidence-based recommendations (e.g., "Marker A tends to under-mark relative to coordinator standards by 12%"). - Allow coordinators to download and archive moderation reports for recordkeeping. 5. System Integration and Usability - Web-based interface accessible via UNSW credentials (Single Sign-On preferred). - Modular design to allow integration with UNSW-supported platforms (e.g., Moodle, Turnitin). - User-friendly dashboard for coordinators to upload datasets, view reports, and manage outputs. - Dedicated view for demonstrators to access AI-generated marking guidelines and training resources. 6. Evaluation and Feedback Collection - In-built survey tool for demonstrators and coordinators to provide usability feedback. - Analytics module to measure variance reduction across markers before and after system use. 7. Security and Governance - Compliance with UNSW data privacy and hosting standards. - Access controls ensuring only course coordinators and approved staff can view moderation reports. - Audit trail documenting all system activities, including dataset uploads and report generation.

Required Skills

Students working on this project should have: 1. Programming Skills: Good knowledge of Python for AI/ML tasks and some experience with web development. 2. AI/ML Basics: Understanding of machine learning, especially natural language processing (NLP) and working with large language models. 3. Data Handling: Ability to clean, preprocess, and anonymise data, with awareness of privacy and ethical issues. 4. Databases and Backend: Basic skills in storing and managing structured data securely. 5. UI/Visualisation: Ability to build simple dashboards and reports and use visualisation tools. 6. Testing & Evaluation: Skills in testing software and gathering feedback from users.

Expected Outcomes

By the end of the project, students are expected to deliver: 1. Source Code: Fully functional code for the AI-assisted moderation system, including data processing, guideline generation, benchmarking, and reporting features. 2. Working Prototype: A web-based application hosted in a secure environment, with coordinator and demonstrator views. 3. Sample Datasets (Anonymised): Example input and output files showing how the system processes assessments and produces reports. 4. System Documentation: Technical documentation

explaining the system architecture, setup instructions, and integration details. 5. User Guide: A clear, step-by-step manual for coordinators and demonstrators on how to use the system (upload data, view reports, interpret outputs). 6. Testing and Evaluation Report: Evidence of system testing, including performance results, benchmarking accuracy, and feedback from trial users.

Disciplines

Software Development;Web Application Development;Artificial Intelligence (Machine/Deep Learning, NLP)