Emotion-Driven Feedback System for College Staff Performance Evaluation

**Abstract**

The "College Staff Feedback System Using Emotion-Based Reviews Submission" aims to enhance the traditional feedback mechanisms by integrating emotion recognition through Convolutional Neural Networks (CNNs). This system provides a robust platform for students to anonymously submit reviews of staff members, ensuring unbiased and honest feedback. The five types of users in this system—Admin, Staff, Students, HOD, and Principal—each have distinct roles that facilitate the efficient management and analysis of feedback. Admins handle staff registration, subject management, and allocation of subjects to staff. Staff members can share educational content and communicate with students, who in turn submit their feedback through an emotion recognition model. This feedback is analyzed by the HOD and Principal to evaluate staff performance and drive improvements in teaching quality.

**Proposed System**

**1. User Roles and Responsibilities**

* **Admin**:
  + Register staff and manage their profiles.
  + Add and manage subjects.
  + Allocate subjects to the respective staff members.
* **Staff**:
  + Share educational content and resources with students.
  + Communicate with students through the platform for academic discussions.
* **Students**:
  + Submit anonymous reviews for staff members.
  + Use the emotion recognition model integrated with a CNN algorithm to provide emotion-based feedback.
* **HOD (Head of Department)**:
  + View and analyze staff performance based on student reviews.
  + Generate reports and insights to improve departmental teaching strategies.
* **Principal**:
  + Access comprehensive analytics on staff performance.
  + Use the data to make informed decisions on staff development and institutional policies.

**2. System Architecture**

* **Frontend**:
  + User interfaces for different roles using web technologies (HTML, CSS, JavaScript).
  + Emotion recognition input interface for students.
* **Backend**:
  + Server-side logic for managing user roles and permissions.
  + Database management for storing user data, feedback, and analytical reports.
* **Emotion Recognition Model**:
  + Implementation of a CNN algorithm to classify emotions based on students' reviews.
  + Integration with the feedback submission process to capture and analyze emotional cues.

**3. Functional Modules**

* **User Management Module**:
  + Admin functionalities for adding, editing, and deleting user profiles.
  + Staff functionalities for content sharing and communication.
* **Subject Management Module**:
  + Admin functionalities for adding and managing subjects.
  + Allocation of subjects to staff members.
* **Feedback Submission Module**:
  + Emotion recognition interface for students to submit reviews.
  + Anonymization of student identities in feedback data.
* **Performance Analysis Module**:
  + Tools for HOD and Principal to view, filter, and analyze feedback.
  + Generation of performance reports and insights.

**4. Emotion Recognition Process**

* **Data Collection**:
  + Gather textual feedback from students.
  + Pre-process text data for analysis.
* **Model Training**:
  + Use a dataset of labeled emotional texts to train the CNN model.
  + Validate and test the model to ensure accuracy.
* **Emotion Classification**:
  + Deploy the trained model to classify emotions in student reviews.
  + Integrate the classification results with feedback data.

**5. Data Security and Anonymity**

* **Anonymization**:
  + Ensure student identities are anonymized in feedback submissions.
  + Implement encryption for sensitive data.
* **Access Control**:
  + Define user access levels and permissions to ensure data security.
  + Regular audits and monitoring to prevent unauthorized access.

**6. Reporting and Analytics**

* **Dashboard**:
  + Interactive dashboard for HOD and Principal to view performance metrics.
  + Visualization tools to represent data insights clearly.
* **Report Generation**:
  + Automated generation of performance reports.
  + Customizable filters to analyze specific aspects of staff performance.

**Conclusion**

The proposed "College Staff Feedback System Using Emotion-Based Reviews Submission" leverages advanced emotion recognition technology to enhance the feedback process, ensuring honest and constructive reviews. By providing detailed analytics and reports, the system empowers HODs and Principals to make informed decisions for improving teaching quality and overall educational standards.