People's Democratic Republic of Algeria
Ministry of Higher Education and Scientific Research
Abdelhamid Mehri University - Constantine 2
Data Science and Artificial Intelligence: SDIA

Intelligent Techniques for Fighting Fraud and Corruption

AI-generated Content Detection Website and Mobile Application

Instructor: Dr. GEULIB Bouchra

Academic Year: 2024-2025

Abdelhamid Mehri University - Constantine 2

Project Overview

In this project, students will develop a website or mobile application capable of detecting whether a given text or script is generated by AI tools. This project aims to apply AI techniques in fraud detection, focusing on identifying AI-generated content and reinforcing students' understanding of text analysis and classification.

Objectives

- Design and develop a user-friendly website and mobile application.
- Implement a model to detect AI-generated content in text.
- Gain hands-on experience with natural language processing techniques.
- Explore the ethical implications of AI in content authentication.

Project Deliverables

1. **Website Or Mobile Application:**
   - A responsive design that includes an input area for text submissions.
   - Backend processing to evaluate the likelihood that the content was generated by AI.
2. **Project Report:**
   - Description of the chosen AI model, including design, development, and training process.
   - Explanation of the tools and technologies used in frontend and backend development.
   - Discussion of challenges faced and how they were addressed.
   - Consideration of ethical issues related to AI content detection.
3. **Presentation:**
   - A 10-minute presentation covering the project's objectives, methods, results, and insights gained.

Evaluation Criteria

- **Technical Implementation** (30%): Effectiveness of the AI model, application functionality, and overall performance.
- **Innovation and Design** (15%): Creativity, user interface design, and usability.
- **Report Quality** (30%): Depth of analysis, clarity, and ethical considerations.
- **Presentation** (25%): Communication skills, clarity, and ability to present key findings.

Tools and Resources

Students should select appropriate tools, technologies, and frameworks for implementing their solution based on their research and the project requirements.

Submission Details

- **Submission Deadline**: [to be Discussed]
- **Submission Method**: Upload code and report to [to be Discussed], and be prepared for an in-person presentation on [to be Discussed].

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Project Milestones and Timeline

- **Week 1: Project Introduction and Planning**
  - Introduction to the project topic and expected outcomes.
  - Team formation, brainstorming, and initial research.
  - Draw a general framework for AI-generated text detection based on your prior knowledge.
- **Week 2: Literature Review and Method Selection**
  - Research AI-based content detection techniques and relevant text analysis methods.
    1. Start by downloading recent papers on AI-driven detection of AI-generated text. For this, you can use databases such as:
       * Google Scholar
       * Elsevier
       * SpringerLink
       * IEEE Xplore
       * Dimensions

       Use specific search terms such as *"AI text generation detection"* and *"artificial intelligence for content authenticity"* for refined queries.
    2. Carefully read the papers, with particular focus on the abstract and methodology sections to understand the core contributions.
    3. Create a summary table to organize findings from these papers, focusing on:
       * **Dataset** used
       * **Preprocessing** steps
       * **Model** applied
       * **Evaluation metrics**
       * **Limitations**
       * **Main contribution**

4. In a structured review, describe the key methods used in these studies, classifying them by detection techniques, such as machine learning, deep learning, or ensemble approaches.
5. Identify and discuss the primary research gaps, and highlight the gap you plan to address in your research.

- Select an approach for developing your detection model.

1. Use tools like Lucid or draw.io to visualize the architecture of your proposed model.
2. For each module in the architecture, detail the specific steps, including data preprocessing, feature extraction, model training, and evaluation metrics.

- **Week 3: Data Collection and Preparation**
  - Gather a dataset of AI-generated and human-written texts.
  - Pre-process data for model training and testing.
- **Week 4: Model Design and Training**
  - Develop and train the detection model.
  - Begin model evaluation to fine-tune parameters.
- **Week 5: Backend Development**
  - Set up backend infrastructure to support the AI model.
  - Integrate model processing for content analysis.
- **Week 6: Frontend Design**
  - Design the user interface for the website and mobile application.
  - Develop input areas for text submissions and result displays.