THE ERINDALE ACADEMY
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IDC4U Interdisciplinary Studies: AI and Business Innovation

Project Step 6- Planning Machine Learning Solutions for your startup company

Application 1 (150-250 words)

Problem:
Plagiarism is a challenge in both online and classroom learning. Learning21 will develop solutions to minimize plagiarism.

Planned Solution:
Learning21 is committed to addressing the pervasive issue of plagiarism, which affects both online and classroom learning environments. To combat this challenge, we plan to develop a comprehensive instant monitoring system designed to verify learners' identities and monitor their engagement during study sessions. This advanced system will employ facial recognition technology to observe learners' faces, emotions, and gestures, ensuring that the person participating in the session is the actual registered student.

Additionally, our monitoring system will track a variety of learner activities. This includes the uploading of assignments and active participation in online discussions, which are critical touchpoints in the learning process. By monitoring these interactions, we can ensure that submissions and communications are conducted in a fair and honest manner.

The technical backbone of this system will be sophisticated machine learning algorithms and trained models, which are adept at processing complex visual and behavioral data in real time. These models will be continuously refined and updated to maintain accuracy and effectiveness.

To further enhance the integrity of academic submissions, our system will be integrated with leading plagiarism checker applications such as Turnitin, GTPZero, and Originality.AI. These tools are essential for analyzing the originality of student assignments by comparing them against extensive databases of existing works. By integrating these plagiarism checkers, we can provide a layered approach to prevent and detect plagiarism effectively.

Our goal with this solution is not only to minimize plagiarism but also to uphold the highest standards of academic integrity, providing a trustworthy foundation for evaluating student work. This proactive approach ensures that Learning21 remains at the forefront of ethical

educational practices, benefiting both educators and learners by fostering a culture of honesty and accountability in educational assessments.

Application 2 (150-250 words)

Problem:
The student's recruitment globally is often an expensive endeavor for schools, primarily due to reliance on international offices and collaborations with multiple recruiting agents.

Planned Solution:
To address the high costs and complexities associated with global student recruitment, Learning21 proposes a strategic shift towards digital automation by implementing an AI-driven recruiting agent (AI Chatbot). This innovative solution aims to streamline the recruitment process, significantly reducing dependency on international offices and multiple recruiting agents, which are traditionally costly and logistically challenging.

The AI Chatbot will be designed to interact seamlessly with prospective students from around the world, providing instant responses and personalized information. To achieve this, Learning21 will compile a comprehensive database of recruitment materials, including detailed descriptions of courses, programs, faculty, campus facilities, and admission criteria. These materials will be submitted through specially designed information forms, transforming them into structured data that serves as the training dataset for the machine learning model powering the AI Chatbot.

This machine learning model will be trained to understand and match students' inquiries with relevant information, effectively simulating a human recruitment officer's role but with greater efficiency and at a fraction of the cost. Learners will be able to inquire about target courses and programs at any time, from any location, using simple conversational inputs to the AI Chatbot. This not only simplifies the process for prospective students but also allows Learning21 to handle a higher volume of inquiries without additional resources.

The use of AI in recruitment is anticipated to not only reduce operational costs but also enhance the reach and responsiveness of Learning21's recruitment efforts. By leveraging technology to optimize recruitment strategies, Learning21 aims to attract a diverse student body while maintaining high standards of efficiency and engagement.

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Application 3 (150-250 words)

Problem:
Our teachers and educational counselors normally engage students in manually monitoring students' learning progress, identifying issues, and predicting outcomes. This manual approach is time-consuming and requires significant effort.

Planned Solution:
To address the labor-intensive and time-consuming nature of manually monitoring student learning progress, Learning21 plans to implement a cutting-edge solution by integrating a Moodle learning analytics plugin into our existing Moodle Learning Management System (LMS). This strategic enhancement is designed to significantly streamline the management and oversight of student learning, shifting from a manual to an automated approach.

The key component of this solution is the development of a supervised machine learning model, which will be trained using a rich dataset of historical academic records. This dataset, meticulously compiled and regularly updated with new student performance data, will serve as the foundation for the model. The machine learning model will be engineered to analyze patterns in student behavior and academic results, effectively diagnosing learning issues and predicting future academic outcomes with high accuracy.

By automating the analysis of student data, this plugin will empower teachers and educational counselors to focus more on intervention and less on data gathering. They will be able to quickly identify students who may be struggling or those who could benefit from more challenging material, and tailor their instructional strategies accordingly.

Additionally, the ongoing updates to the dataset will ensure that the learning analytics system remains dynamic and adaptable to changing educational trends and student needs. This continuous improvement will help maintain the system’s effectiveness and relevance, providing educators with a powerful tool to enhance educational outcomes and foster a more personalized learning environment.

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Application 4 (150-250 words)

Problem: Producing video lectures with human teachers is time-consuming and costly.

Planned Solution:
To tackle the challenges of high costs and extensive time commitments associated with producing traditional video lectures, our strategy involves adopting advanced AI technology through the use of AI avatars. This innovative approach leverages machine learning algorithms to create digital personas that can deliver lecture content efficiently and engagingly.

AI avatar technology enables the generation of customized avatars that not only resemble real human instructors in appearance but also mimic their speech patterns and gestures. This high degree of personalization enhances the learning experience, making digital lectures feel more interactive and personal. Among the leading AI avatar platforms are Synthesia, HeyGen, DeepBrain, Synthesys, D-ID, and VEED. Each offers unique features and capabilities that can be tailored to suit different educational needs and content delivery styles.

Our plan includes a thorough analysis of these available technologies to select the most suitable option based on criteria such as realism, ease of use, scalability, and cost-effectiveness. We aim to identify a platform that not only delivers high-quality video content but also integrates seamlessly with our existing digital learning environment.

Once implemented, AI avatars will significantly reduce the resources required to produce engaging and informative video content. By automating the lecture production process, we can provide a consistent learning experience across various subjects without the recurring expense or logistical complexities of filming traditional lectures. This shift not only promises substantial cost savings but also enhances our capability to scale our educational offerings globally without compromising quality.