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| PERSONALIZED CAREER PLANNING THROUGH AI: |
| MERGING ACADEMICS, SPORTS AND EXTRA CURRICULARS |

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# INTRODUCTION

The process of choosing a career path is often challenging for students. Even with the guidance of teachers, parents or people already in the industry people still find it hard and sometimes to a point of relying on old methods to try and determine what may be good for the student and more than often people may make decisions that may be sub-standard, while others might just be totally wrong for the student in question, over reliance on academic performance without looking at other performance in other sectors like class relationships, field performances the likes. This AI project aims to provide a solution that will help to analyze all the possibilities for this student with the academic performance and grade helping them make a well informed decision to better their future, with a twist.

# PROBLEM STATMENT

Students often struggle with choosing a career that aligns with their diverse skills, interests, and achievements. Traditional career guidance systems tend to focus primarily on academic performance, neglecting the importance of other key factors such as sports performance, extracurricular activities, leadership roles, and creative talents. This narrow approach often leads to students being funneled into career paths that may not fully reflect their abilities or passions, resulting in dissatisfaction and unfulfilled potential.

While academic achievement is crucial, many career paths—especially in fields like sports management, physical education, sports science, and even leadership roles in business—require a blend of academic knowledge, physical prowess, teamwork, and other soft skills that are often developed outside the classroom. For example, students who excel in sports may possess unique skills such as discipline, perseverance, and teamwork that are highly valued in professional environments but overlooked by systems that only assess academic grades.

Moreover, involvement in extracurricular activities such as debate clubs, music, arts, volunteering, and student leadership can further develop critical skills like communication, creativity, problem-solving, and leadership. These experiences often provide students with a well-rounded skill set that can be just as valuable as academic success when choosing a career. However, without proper recognition of these non-academic achievements, many students are left without career guidance that considers the full spectrum of their capabilities.

As a result, there is a growing need for a more holistic system that evaluates both academic performance and other important factors such as sports achievements, extracurricular involvement, and personal interests. This system should provide personalized career recommendations that reflect the totality of a student’s abilities, helping them to pursue fulfilling careers that align with their strengths in all areas—not just academics.

# OBJECTIVE

The primary objective of this AI project is to provide students with personalized career guidance that considers a broader range of factors, including academic performance, sports achievements, and extracurricular activities. By leveraging AI, the system will analyze these factors and suggest career paths that align with a student's strengths, interests, and skills. The AI system aims to:

- Empower students to make informed career decisions based on their unique combination of academic and non-academic achievements.

- Bridge the gap between traditional academic-based guidance and a more inclusive, holistic approach that incorporates sports, leadership, arts, and other extracurricular activities.

- Increase the accuracy and relevance of career recommendations by incorporating a wider range of data inputs.

- Support educators and career counselors in providing data-driven, tailored advice to students, thus enhancing the overall quality of career guidance in educational institutions.

# PROPOSED AI SOLUTION

The AI system will be a career recommendation platform that processes data from multiple areas of student performance. The solution will utilize a combination of machine learning algorithms, data analysis, and career mapping to generate personalized career suggestions. Here's a breakdown of how the system will work:

Data Input and Collection

The system will collect data from academic performance reports (e.g., grades, subjects), sports achievements (e.g., records, awards, participation), and extracurricular activities (e.g., leadership roles, creative talents, club participation). Data can be sourced from school systems, student profiles, or manually input by students or counselors.

## Career Path Mapping

The AI will have access to an extensive database of career paths, each with a set of skills, knowledge areas, and attributes required for success. These careers will be categorized by industries and fields (e.g., sports management, engineering, business, arts, physical education) and will include both traditional and emerging careers.

## Machine Learning Algorithms

The system will use supervised learning models (e.g., decision trees, random forests, or neural networks) to analyze student data. The AI will learn patterns between academic and non-academic achievements and career outcomes. It will also continuously improve over time by learning from new data and feedback, making the recommendations more refined and personalized.

## Recommendation Engine

Based on the input data, the AI will generate a list of career suggestions, ranked according to how well they align with the student's profile. The system will consider multiple factors such as strengths in specific subjects, sports skills, extracurricular activities, and personal interests. It will also allow students to explore potential career paths and see how their current performance impacts future options.

## User Interface

The platform will have a user-friendly interface where students can input or review their data and receive career suggestions. Additionally, counselors and educators will be able to view reports and insights to guide conversations about future career planning.

# IMPACTS AND BENEFITS

The proposed AI system offers numerous benefits to students, educators, and the education system as a whole:

## For Students

- Students will receive personalized career guidance based on a holistic understanding of their capabilities, not just their academic grades.

- The system will help them discover career paths that might not have been considered based on academic performance alone. For example, students excelling in both academics and sports might be guided toward careers like sports medicine, sports journalism, or sports management.

- The system encourages students to value and prioritize extracurricular and sports participation, highlighting their importance in future career development.

- Students will have increased confidence in their career choices, as the AI-generated recommendations are backed by data and analysis of their achievements and skills.

## For Educators and Career Counselors

- Educators will be able to provide more accurate, data-driven career advice to students.

- Career counselors will be supported in offering more comprehensive guidance, enabling them to consider factors they might have previously overlooked.

- The system will reduce bias in career recommendations, as it will equally weigh academic and non-academic achievements.

## For Society

- By aligning students’ talents and interests with appropriate career paths, the system can help reduce job dissatisfaction and unemployment among young people.

- It will support the development of a well-rounded workforce that values both academic and extracurricular skills, fostering diversity in industries.

# FEASIBILITY

The feasibility of implementing this AI project relies on several factors:

## Data Availability

Schools typically have readily available academic data, and many educational institutions also track sports and extracurricular achievements. This data can be structured and digitized for easy input into the AI system. However, care must be taken to standardize the data formats across institutions to ensure the model can process it consistently.

## Technology Infrastructure

The project requires access to machine learning libraries (such as TensorFlow, PyTorch, or Scikit-learn), cloud-based computing resources, and a robust database to store career paths and student data. The technology is readily available and can be implemented cost-effectively in most educational settings.

## Challenges

- Gathering reliable data on non-academic achievements might be a challenge, as many schools do not track extracurricular activities and sports at the same level as academic data.

- Ensuring that the AI system accounts for biases and offers fair career suggestions to all students, regardless of their background or academic standing.

- Collaboration with educational institutions and sports organizations will be key to ensure the system receives accurate and comprehensive data on student performance.

## Scalability

The AI system can be easily scaled as more students and schools adopt the platform. Continuous updates to the system’s algorithms and career path database will ensure that it remains relevant and accurate as new careers emerge and educational trends evolve.

# CONCLUSION

The proposed AI project offers a new way to guide students in choosing careers by considering a wide range of their skills and achievements—both academic and extracurricular. Using AI and data analysis, the system provides personalized career recommendations that better match students' unique talents. This approach not only helps students make more informed decisions but also supports educators in offering well-rounded advice. As the workforce increasingly values both academic and non-academic skills, this AI system addresses a key challenge by helping students find careers that align with their strengths and interests, leading to more fulfilling futures.