CONTENT OF THIS TEMPLATE

- AIR Canvas employs AI and finger-tracking technology to enable educators to draw and teach in the air, eliminating the need for physical boards and markers.
- A camera tracks the movement and position of the user’s specific finger in real time.
- Users can select multiple colors, can clear the previous text and drawings.
- AIR Canvas is a cost-efficient alternative to traditional tools, saving money and space. It's ideal for budget-conscious institutions and space-constrained environments.

INVISIBLE AIR CANVAS

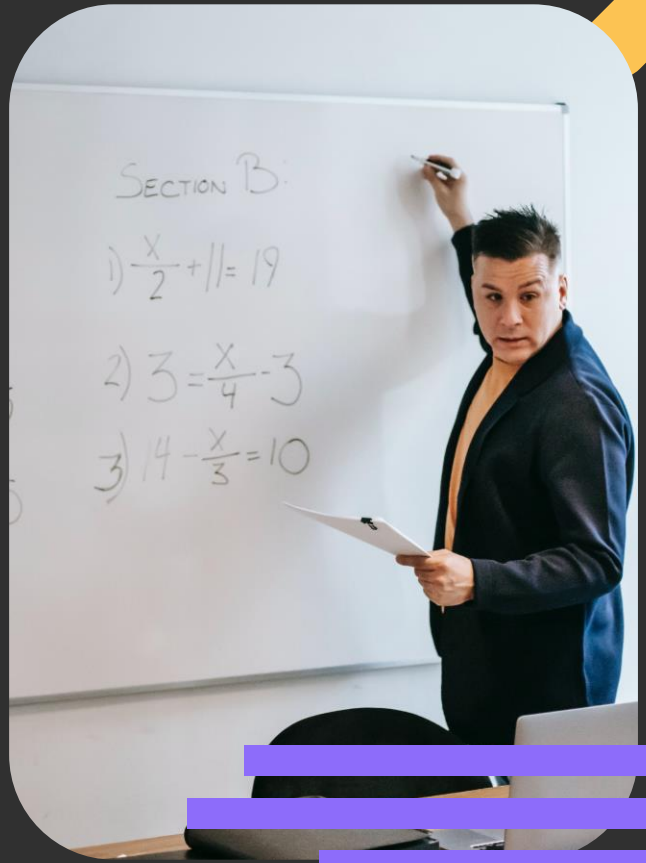
An AI project based on OpenCV and Image Processing

TABLE OF CONTENT

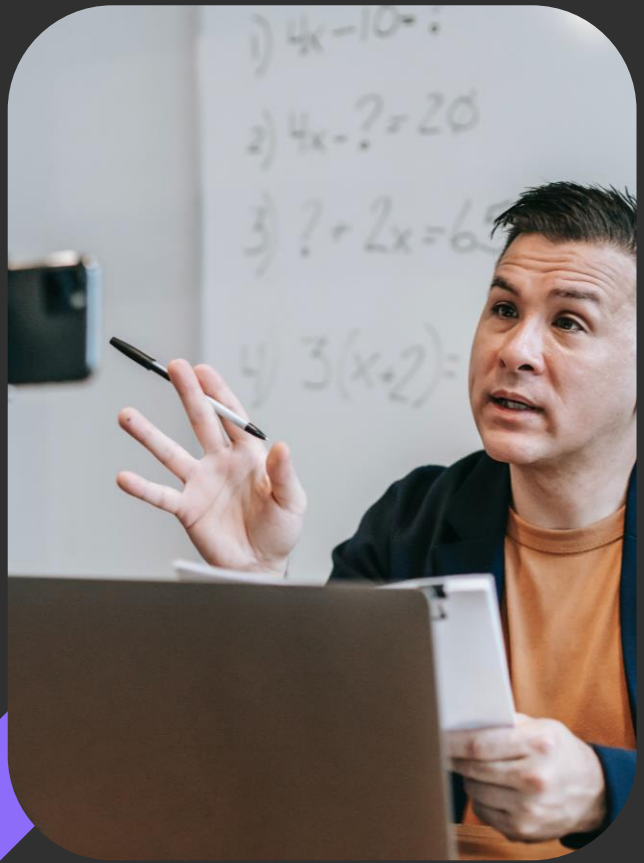
01
THE ACTUAL PROBLEM

ACTUAL PROBLEM

- Traditional teaching tools (e.g., physical and digital boards) are costly to acquire and maintain.
- These tools require dedicated physical space, making them impractical for some settings.
- Accessibility to such tools is limited, creating inequalities in education.
- The rigidity of existing tools can hinder educators in effectively teaching complex concepts.



02
INTRODUCTION



INTRODUCTION

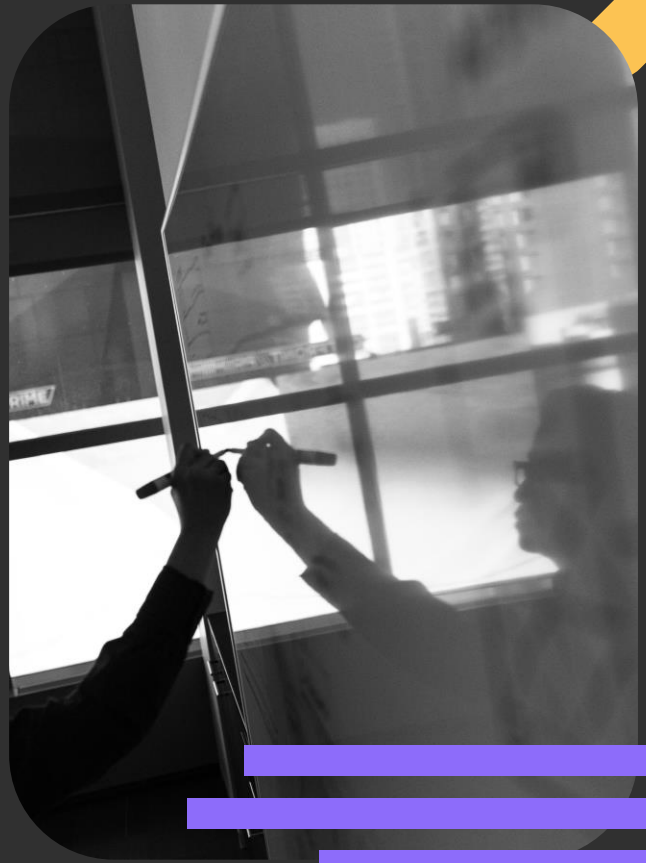
Our project, the "AeroBoard," is an innovative solution to the problem mentioned above. It leverages computer vision and machine learning technologies to transform any space into a virtual canvas for teaching and learning. Using a simple setup that includes a camera and a computer, our system allows users to draw and write in the air, converting their gestures into digital images that can be projected onto a screen and can be helpful in recording video courses.

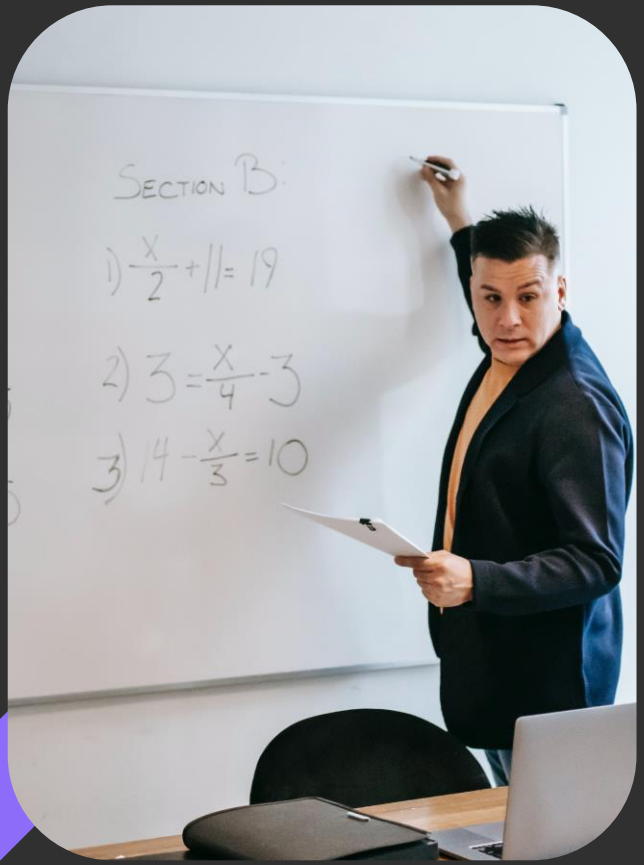
MOTIVATION

The motivation behind our project is to democratize education tools and make them accessible to everyone, regardless of their financial constraints or geographical location. We believe that technology should enhance, not hinder, the learning process. By providing an affordable and intuitive solution for teachers to create engaging presentations and explain concepts with ease, we aim to revolutionize the way education is delivered.

GAP ANALYSIS

Existing digital board solutions are expensive, require specific hardware, and are often limited to fixed locations. Moreover, they may not be readily available in every educational setting. This creates a gap in providing an interactive and dynamic learning experience to students. Our project aims to bridge this gap by offering a cost-effective, portable, and accessible alternative.





OBJECTIVES

- Develop a real-time hand gesture recognition system for drawing and writing in the air.
- Create an intuitive user interface for teachers to control and customize their runtime writings/drawing.
- Implement machine learning algorithms to train the system to recognize gestures quickly and reliably.
- Ensure real-time responsiveness to user gestures to provide a seamless drawing experience.
- Ensure affordability and accessibility for educational institutions of all sizes.

HARDWARE & SOFTWARE REQUIREMENTS

HARDWARE

A camera (webcam or smartphone camera) and a computer with reasonable processing power.

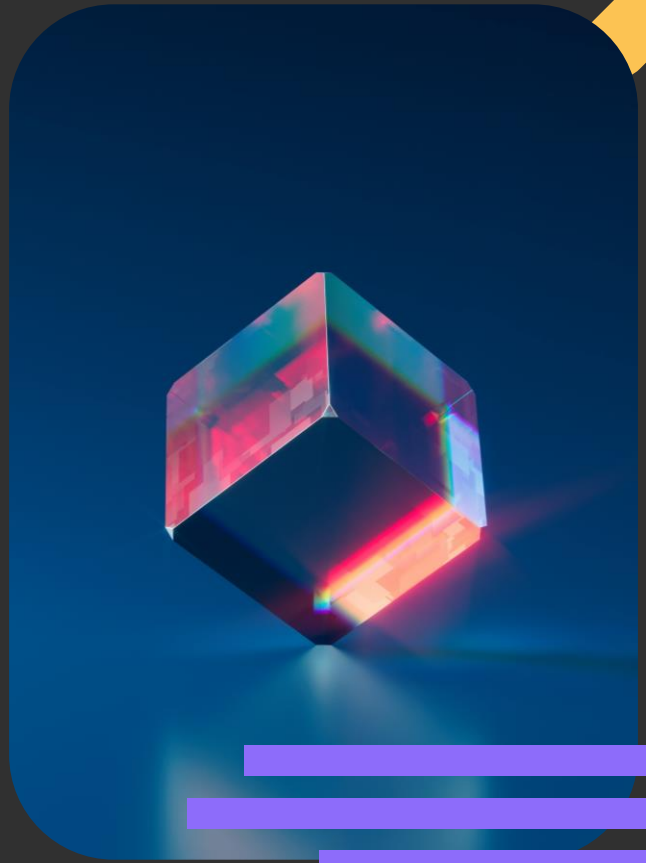
SOFTWARE

OpenCV for computer vision, machine learning libraries (e.g., TensorFlow or PyTorch),

SOCIAL IMPACT

The social impact of our project is significant. It:

- Reduces the financial burden on educational institutions, making quality education more accessible.
- Empowers teachers to create more engaging and interactive lessons.
- Increases flexibility in teaching methods, benefiting students with diverse learning styles.
- Promotes remote and online education, especially in times of crisis.



CONCLUSION

In conclusion, our “AeroBoard" project aims to revolutionize teaching and learning by providing an affordable, accessible, and interactive platform. By enabling teachers to draw and write in the air, we eliminate the need for expensive digital boards and make education more engaging. Our solution has the potential to reshape the way we teach and learn, making it accessible to everyone, anywhere, and at any time.