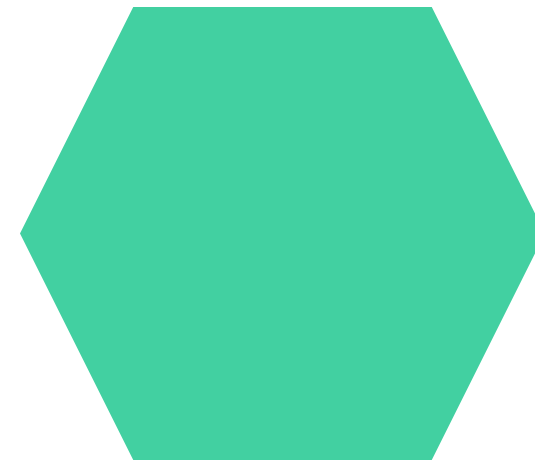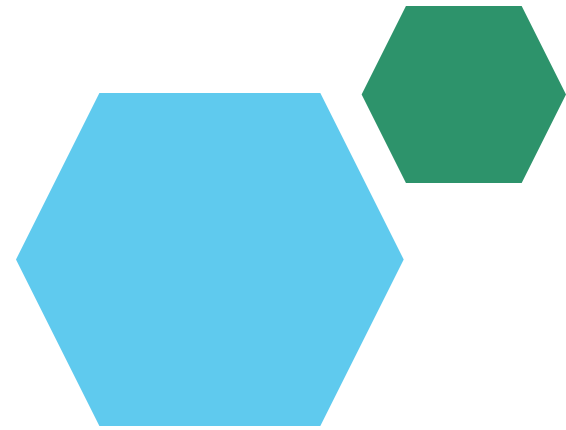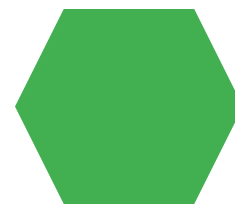# Digital Portfolio

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DEPARTMENT: BCA

COLLEGE: KPR COLLEGE OF ARTS SCIENCE AND RESEARCH

PROJECT TITLE

TITLE: AI POWERED MIYAWAKI TREE PLANNER

AGENDA

1. Problem Statement
2. Project Overview
3. End Users
4. Tools and Technologies
5. Portfolio design and Layout
6. Features and Functionality
7. Results and Screenshots
8. Conclusion
9. Github Link

PROBLEM STATEMENT

Urbanization has reduced green cover, causing pollution, heat, and biodiversity loss. The Miyawaki method can restore greenery, but challenges exist in species selection, space optimization, and resource planning. An AI-powered Miyawaki Tree Planner can solve this by analyzing soil, climate, and space data to suggest suitable native species, optimize planting density, and provide resource estimates, making afforestation more efficient and scalable.

PROJECT OVERVIEW

The AI-powered Miyawaki Tree Planner is a smart system designed to simplify and optimize the creation of dense urban forests using the Miyawaki method. It uses artificial intelligence to analyze factors such as soil type, climate, space availability, and local biodiversity. Based on this data, the system recommends suitable native species, planting arrangements, and resource requirements.

WHO ARE THE END USERS?

Urban planners & municipal bodies – for designing green spaces in cities.

Educational institutions & NGOs – for campus and community afforestation drives.

Corporate organizations (CSR initiatives) – for sustainability and green projects.

Environmentalists & forest departments – for large-scale biodiversity restoration.

Individuals & communities – who want to create Miyawaki micro-forests in small plots or backyards.

TOOLS AND TECHNIQUES

Tools:

Python – for AI and data analysis
Excel/Database – to store plant, soil, and climate info
Google Maps/QGIS – to see land and plan layout
Web or Mobile App – to show recommendations

Techniques:

AI/ML – to suggest best trees for the area
Soil & Climate Analysis – to check if plants will grow well
Space Optimization – to plan planting efficiently
Visualization – to show the forest layout and resources needed

POTFOLIO DESIGN AND LAYOUT

1. Cover Page

Title: AI-Powered Miyawaki Tree Planner

Your Name / Class / School

Date

Optional: Small illustration of trees

2. Problem Statement

Short paragraph: Urban areas are losing greenery. Miyawaki forests help, but planning is hard. AI can suggest the best trees, layout, and resources.

3. Project Overview

One or two sentences: This project uses AI to plan Miyawaki forests by analyzing soil, climate, and space to recommend native species and optimal planting.

4. Objectives

Suggest suitable native trees

Plan planting layout efficiently

Estimate resources (saplings, water, maintenance)

5. End Users

Students / Schools / Communities

NGOs & Environmental groups

Municipal bodies

6. Tools & Techniques
Tools: Python, Excel, Google Maps
Techniques: AI for tree selection, soil & climate analysis, layout planning
7. Features
Tree species recommendation
Planting layout optimization
Resource estimation
Visual forest plan
8. Benefits
More green cover and biodiversity
Easy planning for students and communities
Saves time and resources
9. Conclusion
Short sentence: AI makes Miyawaki forest planning simple, efficient, and eco-friendly.
Design Tips for Students:
Use green and brown colors
Add small tree icons or illustrations
Keep text short and clear
Include simple diagrams for layout or workflow

FEATURES AND FUNCTIONALITY

The AI-powered Miyawaki Tree Planner suggests native tree species, optimizes planting layout, estimates resources (saplings, water, fertilizers), and provides a maintenance schedule. It also visualizes forest plans and can be used for small to large areas, helping users efficiently create dense, biodiverse urban forests.

RESULTS AND SCREENSHOTS

CONCLUSION

The AI-powered Miyawaki Tree Planner makes creating dense, native micro-forests easy and efficient. By analyzing soil, climate, and space, it recommends suitable species, optimizes planting layouts, and provides resource and maintenance plans. This tool helps students, communities, and organizations restore green cover, enhance biodiversity, and contribute to a healthier, sustainable environment.