

## AI-Powered Figma to Code Converter

The students will research and develop an AI-powered tool that converts Figma designs into real, usable front-end code (HTML, CSS, JS). The tool should be able to open and render a Figma design as a functioning website.

### Project Requirements

#### 1. AI Tool Development

- Develop a tool that processes Figma design files and generates structured, clean front-end code.
- The tool must:
  - Identify UI components (buttons, text fields, images, etc.).
  - Maintain design consistency (spacing, typography, colors).
  - Generate HTML, CSS, and JavaScript code that can be opened and run in a browser.
- **AI Techniques That Can Be Used:**
  - **Computer Vision (CV):**
    - Object detection for recognizing UI components in Figma images.
    - Image segmentation to differentiate elements in a design.
  - **Natural Language Processing (NLP):**
    - Extracting and understanding design metadata (e.g., component names, class labels).
    - Converting design descriptions into structured HTML code.
  - **Neural Networks (NN):**
    - Using deep learning models to improve Figma design-to-code accuracy.
    - Auto-generating CSS styles based on learned design patterns.
  - **Transformer Models (e.g., GPT, T5, or Vision Transformers):**
    - Generating structured front-end code from Figma JSON data.
    - Automating responsiveness and accessibility features.

### Existing AI-Powered Figma-to-Code Tools for Reference

- [Locofy.ai](#) – Uses AI to generate developer-friendly, responsive HTML/CSS from Figma.
- [Builder.io Visual Copilot](#) – Converts Figma designs into React, Vue, Svelte, Angular, or plain HTML.
- [Codia.ai](#) – AI engine transforms Figma designs into production-ready front-end code.
- [TeleportHQ](#) – Provides instant Figma-to-code conversion for JavaScript frameworks.
- [Anima App](#) – Converts Figma designs into React, HTML, Vue, Tailwind, and more.

The students should compare these tools and propose improvements in their own AI-powered solution.

### Submission Guidelines

- **All files (code, README) must be sent via email**
- Ensure the AI tool is functional and can be tested during the defense.