



# Cortex Shield

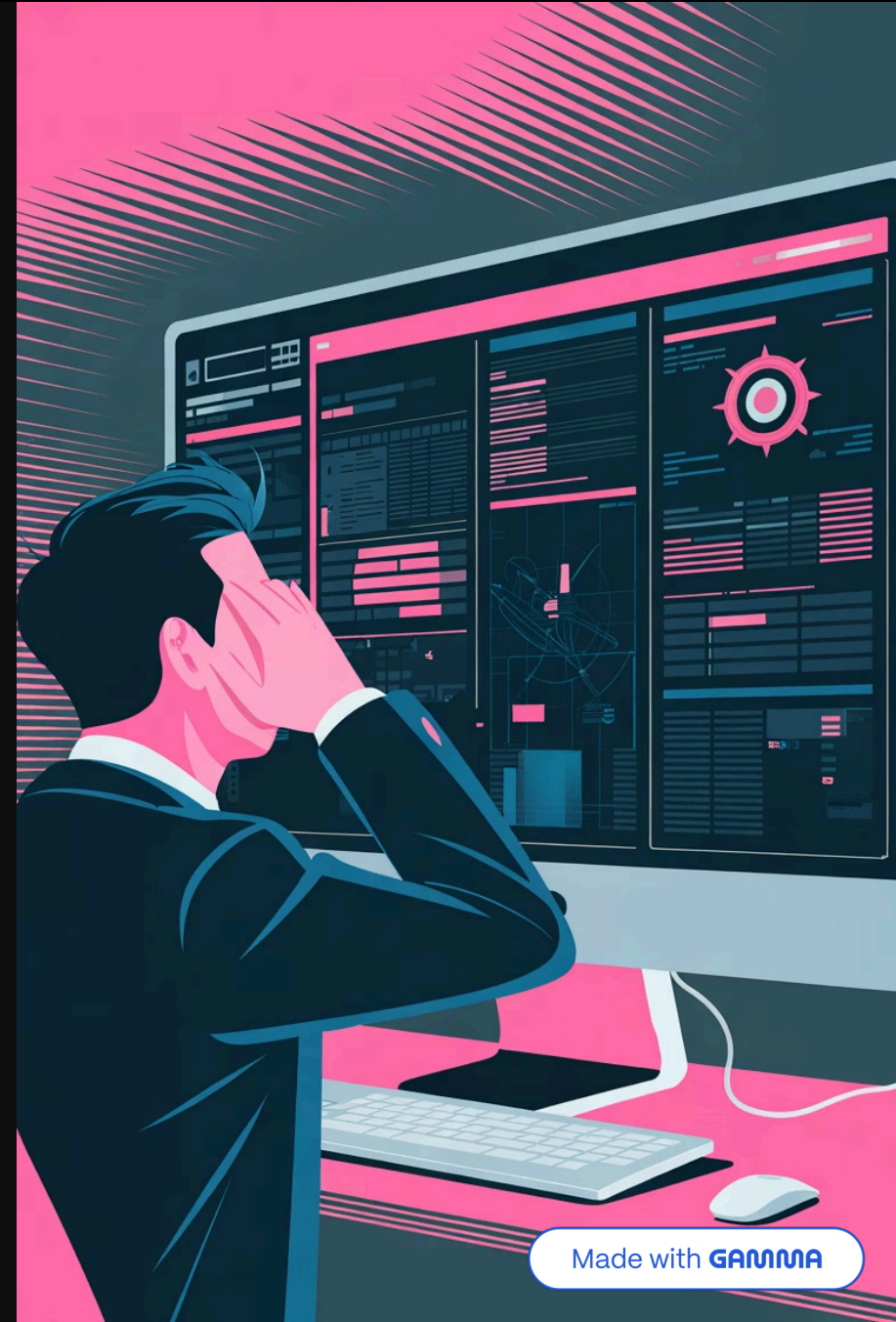
## AI-Powered Security Analysis Toolkit

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# The Problem We're Solving

Organizations and individuals face unprecedented security challenges in today's digital landscape. Let's examine the critical barriers preventing widespread security adoption.



# The Cybersecurity Accessibility Crisis

Four critical barriers are leaving millions vulnerable to cyber threats:



## Complexity Crisis

Traditional security tools demand deep technical expertise with complex interfaces that intimidate non-technical users and create adoption barriers.



## Fragmentation Issue

Organizations need multiple specialized tools with no unified platform, forcing security teams to juggle disconnected solutions.



## Accessibility Gap

Enterprise tools cost thousands of dollars annually, leaving small businesses and individuals without adequate protection.



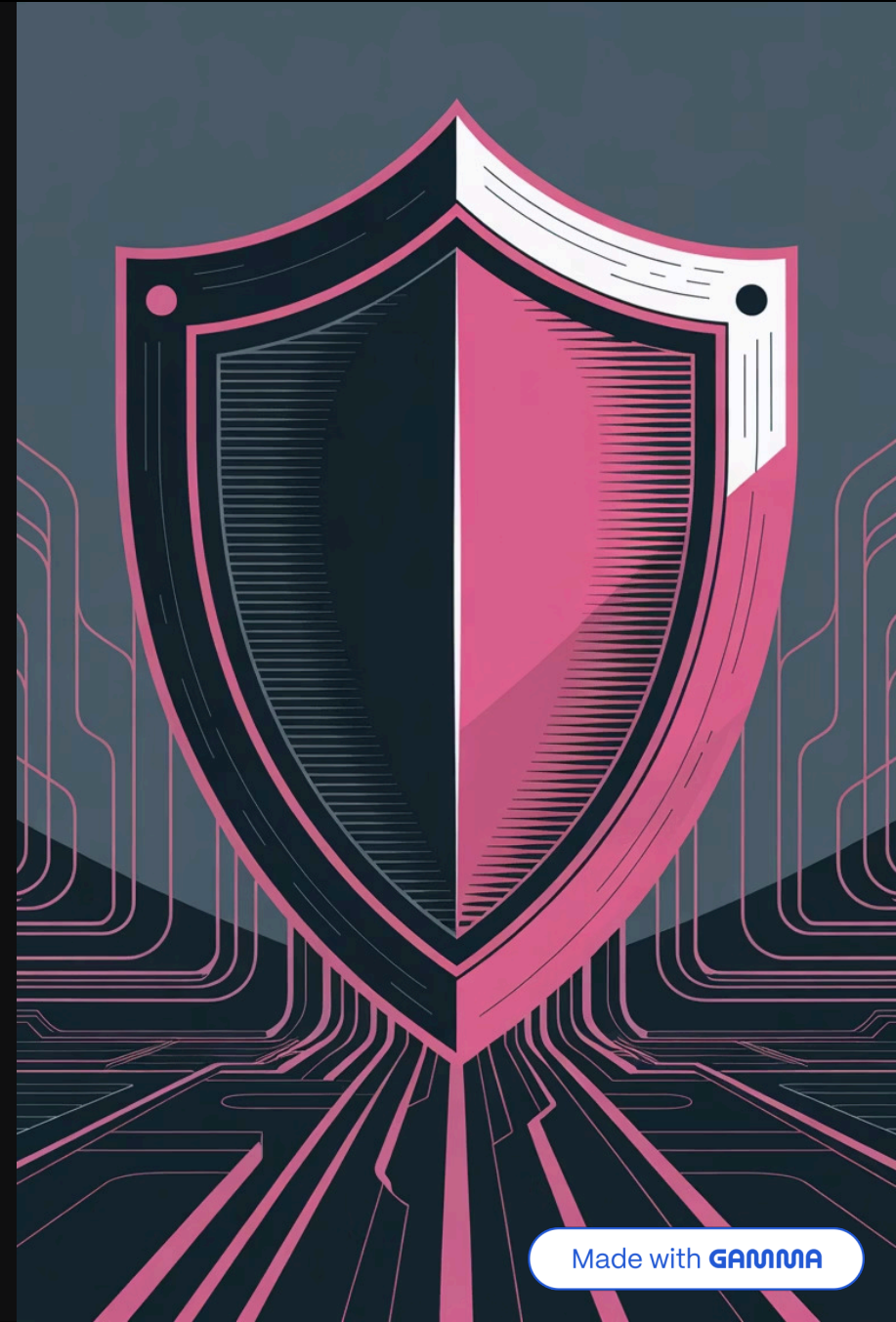
## Slow Response

Manual analysis takes hours or days, allowing critical vulnerabilities to remain unnoticed and exploitable.

❏ **The Core Problem:** No single, user-friendly, AI-powered platform provides instant, comprehensive threat analysis accessible to everyone—until now.

# Our Solution Approach

Cortex Shield reimagines cybersecurity by combining cutting-edge AI with intuitive design, making enterprise-grade protection accessible to everyone.







# Cortex Shield: AI-Powered Security for All

We've built a comprehensive solution that addresses each barrier with intelligent design:

01

## AI-First Architecture

Powered by Google Gemini 2.5 Pro for context-aware threat detection with natural language explanations in plain English. Advanced text and image analysis capabilities provide comprehensive coverage.

02

## Unified Platform

Nine specialized security modules integrated into a single, seamless interface with session-based history tracking. No more juggling multiple tools.

03

## User-Centric Design

Zero technical knowledge required. Beautiful glassmorphism UI with 3D effects and a flexible 3-theme system (Default, Light, and Dark modes) adapts to user preferences.

04

## Open & Accessible

100% free and open-source with no subscriptions or hidden costs. We believe security should be a right, not a privilege.

# Technology Powering Innovation

Cortex Shield leverages a modern, carefully selected technology stack designed for performance, security, and scalability.



# Modern, Scalable Architecture

## Frontend Technologies

- **HTML5/CSS3 + JavaScript (ES6+)** for responsive interfaces
- **Tailwind CSS** for utility-first styling and rapid development
- **Three.js** for immersive 3D particle backgrounds
- **Axios** for reliable HTTP communication

## Backend Technologies

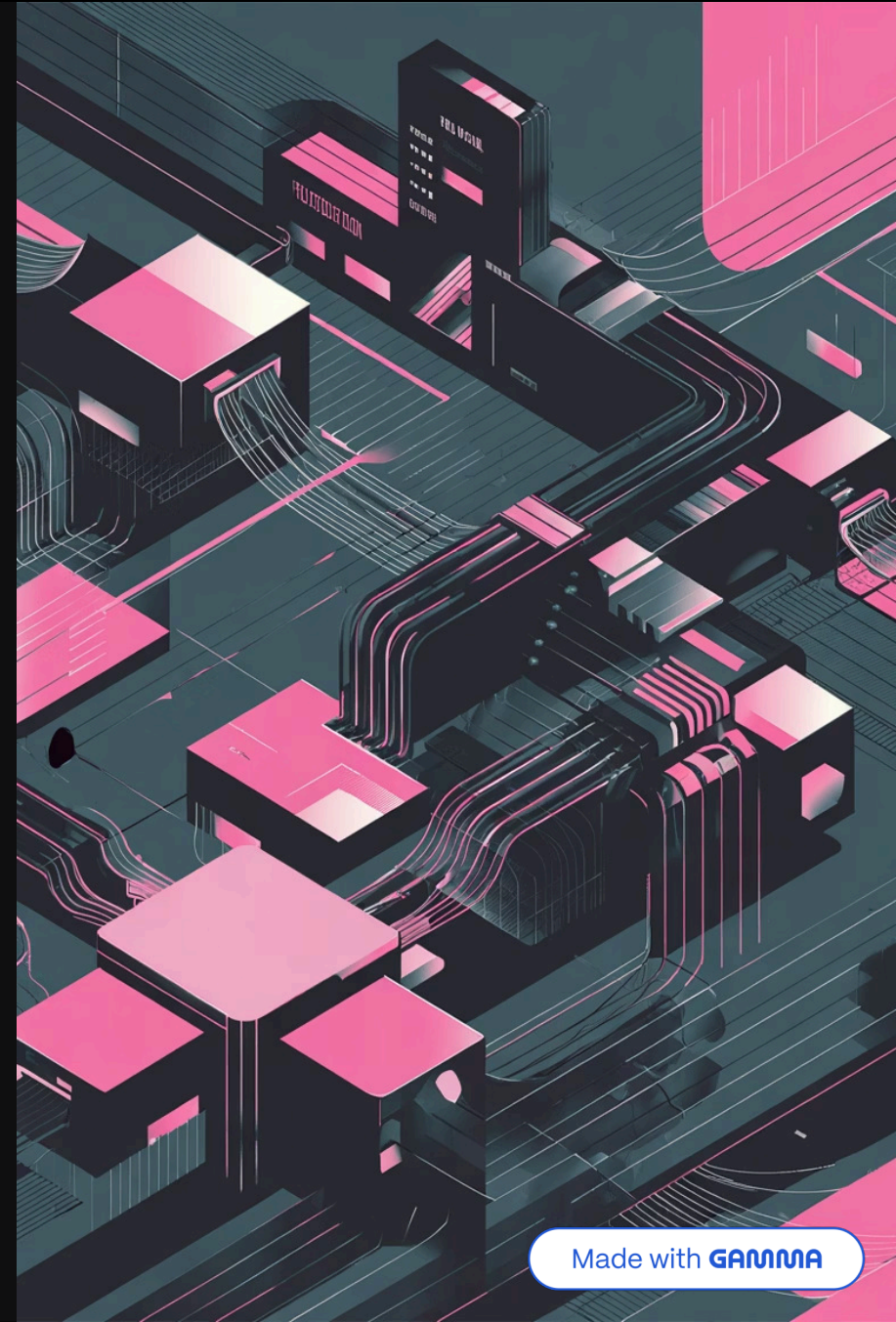
- **Node.js 18+** with Express.js framework for robust APIs
- **Multer** for secure file upload handling
- **CORS + Helmet** for enhanced security

## AI & External Services

- **Google Gemini 2.5 Pro** — Advanced text and vision AI analysis with context-aware threat detection
- **VirusTotal API** — Multi-engine malware detection leveraging 70+ antivirus engines

## Development Tools

- **Git** version control for collaboration
- **VS Code** with Live Server for development
- **Nodemon** for hot reload capabilities



# System Architecture Overview

Our architecture follows a clean, layered approach that ensures security, performance, and maintainability:







# High-Level Design

## User Interface Layer

Landing Page → Dashboard → Module Selection provides intuitive navigation with responsive design and 3D visual effects.

## Frontend Layer

UI Manager, Theme Controller, and Three.js renderer work with the API Client, State Management, and Module Controllers to deliver seamless experiences.

## Backend Layer (Express.js)

CORS, Helmet, and Body Parser provide security. Multer handles uploads while Routes and Error Handling ensure robust API operations.

## AI & Security Services

Gemini AI API and VirusTotal API provide powerful analysis capabilities with multi-engine threat detection and intelligent insights.

❏ **Data Flow:** User Input → Validation → API Request → AI Analysis → Formatted Response → Visual Display with real-time feedback



# Core Features in Action

Let's explore how Cortex Shield's nine specialized modules work together to provide comprehensive, accessible security analysis for users of all technical levels.