

NeuroNudge: AI-Powered Focus Companion for ADHD

NeuroNudge offers gentle, AI-driven productivity support, specifically designed for neurodivergent brains. It aims to foster sustained focus and task engagement without overwhelming the user.

Theme ID: 4

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Navigating Productivity Challenges with ADHD

Individuals with ADHD often face unique obstacles in daily productivity. Traditional tools can inadvertently exacerbate these challenges, leading to frustration and reduced output.

Task Activation Difficulty

Overcoming the initial hurdle to begin tasks (activation energy).

Project Overwhelm

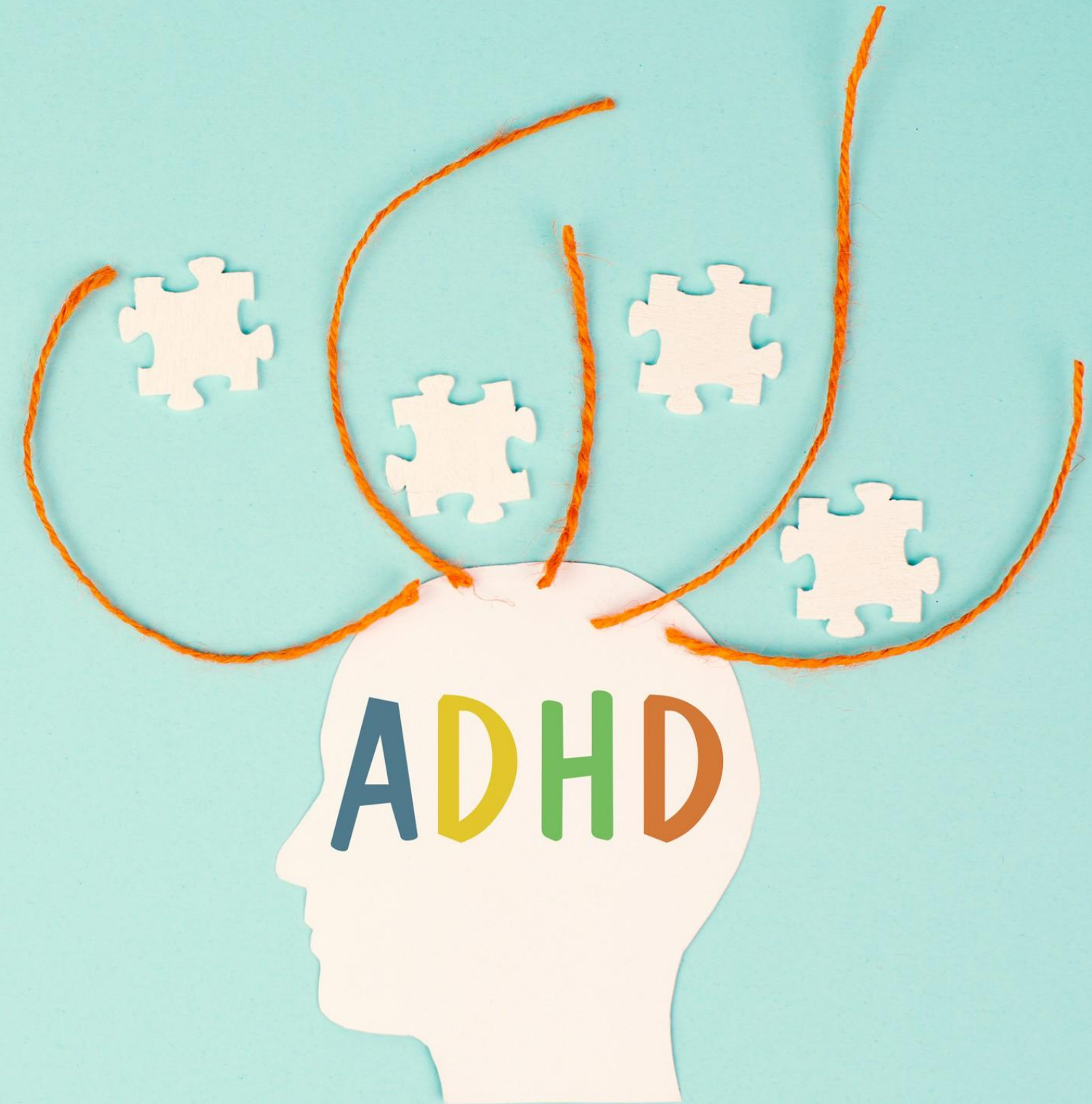
Feeling swamped by complex or multi-stage projects.

Time Blindness

Struggling with accurate perception and management of time.

Emotional Regulation

Managing emotions like frustration or boredom during tasks.





Introducing NeuroNudge: Your Gentle Focus Companion

NeuroNudge is engineered to provide compassionate and effective support, translating common ADHD challenges into manageable, achievable steps. It adapts to your needs, promoting a healthier relationship with productivity.



AI Task Decomposition

Breaks down large tasks into smaller, digestible components.



Mood-Adaptive Support

Delivers encouragement tailored to your current emotional state.



Neuro-Friendly Timer

Calming sounds and visual cues replace jarring alerts.



Pressure-Free Visuals

Visualises progress without creating undue stress.

Key Features & Transformative Impact

NeuroNudge integrates cutting-edge AI with empathetic design to offer a truly unique productivity experience, leading to tangible improvements in focus and well-being.

Intelligent Task Breakdown



LLM-Powered Decomposition
Automatically splits projects into manageable micro-tasks.

Time-Based Grouping
Phases are grouped with estimated durations for clarity.

Micro-Reward System
Gentle affirmations upon completing each sub-task.

Transformative Outcomes



Reduces Initiation Anxiety
Lowers the barrier to starting work on daunting tasks.

Flexible Structure
Provides guidance without imposing rigid, unhelpful rules.

Sustainable Habits
Fosters lasting productivity patterns and self-compassion.

Robust Full-Stack Implementation

NeuroNudge's architecture is meticulously designed for performance, scalability, and seamless user interaction, ensuring a reliable and responsive application experience.

01	02	03
Frontend: Streamlit	Backend: Python & SQLite	AI Core: OpenAI GPT-4o-mini
Interactive user interface with custom CSS for a minimalist, calming aesthetic.	Robust Python scripts for logic, with SQLite handling efficient data storage.	Powers intelligent task planning, contextual nudges, and personalised insights.
04	05	
Emotion Classification	Audio Integration	
Integrated pipeline for discerning user sentiment from input.	Seamless audio delivery for focus enhancement and gentle alerts.	

Efficient Data Management with SQLite

Our database design prioritises simplicity and efficiency, ensuring that all user interactions, progress, and preferences are securely and reliably stored. This forms the backbone of NeuroNudge's adaptive support system.

- **Emotion History Tracking**
Records shifts in user mood to refine adaptive encouragement.
- **Task & Subtask Relations**
Maintains hierarchical structure of decomposed tasks.
- **Progress Persistence**
Ensures user progress is saved across all sessions and devices.
- **Timestamped Interactions**
Captures precise timing of user actions for behavioural analysis.
- **Scalable Structure**
A light-weight yet robust design for future expansion.



Advanced AI Integration & Intelligence

The core of NeuroNudge's adaptive capabilities lies in its sophisticated integration of large language models, enabling personalised interactions and dynamic assistance.

- **Intelligent Task Decomposition**
Breaks down complex projects into neuro-friendly, manageable steps.
- **Emotion Classification**
Analyses user input to accurately gauge emotional state.
- **Contextual Encouragement**
Generates empathetic and relevant motivational messages.
- **Music Recommendation**
Suggests calming or focus-enhancing audio based on detected mood.
- **Structured Output Parsing**
Ensures AI responses are always actionable and well-formatted.



Designing for the Neurodivergent User Experience

Every aspect of NeuroNudge's interface is crafted with ADHD-friendly principles at its heart, minimising distraction and maximising ease of use to promote genuine engagement and comfort.



Distraction-Free Interface

Clean design reduces cognitive load and visual clutter.



Clear Navigation

Prominent buttons and legible text for effortless interaction.



Gentle Visual Indicators

Progress is shown without demanding constant, anxious attention.



Serene Aesthetics

A soothing colour scheme and subtle animations for a calm experience.



Empathetic Audio Cues

Soft, non-alarming sounds guide users without abrupt interruptions.

NeuroNudge: Interactive Demo Highlights

Experience the intuitive and supportive features of NeuroNudge firsthand. Our demo showcases the seamless integration of AI and user-centric design in action.

Flexible Focus Timer

Adjustable durations to match individual focus spans.

Dynamic Task Breakdown

Witness tasks being instantly atomised by our AI.

Adaptive AI Responses

See how NeuroNudge adapts to subtle shifts in user mood.

Calming Soundscapes

Select from a library of ambient sounds for enhanced concentration.

Progressive Companion

Track your growth and celebrate achievements with gentle feedback.

Overcoming Challenges & Future Horizons

Developing NeuroNudge presented unique technical hurdles, each overcome with innovative solutions. We also envision significant opportunities for future growth and expanded impact.

Technical Challenges & Solutions



Task Decomposition Consistency

Resolved with a multi-layer LLM approach for nuanced detection.

Emotion Classification Accuracy

Ensured via robust structured output parsing techniques.

Real-time Timer Management

Optimised for seamless operation through efficient session state.

Future Enhancements



Mobile Application

Bringing NeuroNudge to iOS and Android platforms.

Wearable Integration

Biometric feedback for even more personalised support.

Advanced Analytics

Deeper insights into individual focus patterns and progress.

Social Features

Optional accountability partnerships and community support.