

# Neurolearn

*EEG × AI for Learning Optimization*

Agnes Chen | Columbia University

# Problem

- Millions of students struggle to know **when to study most effectively**.
- With multiple subjects and deadlines, it's hard to decide **what to prioritize**. ADHD learners face even greater challenges with focus and efficiency.
- Today's EdTech tools only **track study time and tasks** but fail to deliver **personalized strategies** that guide learners toward peak performance.

# Solution

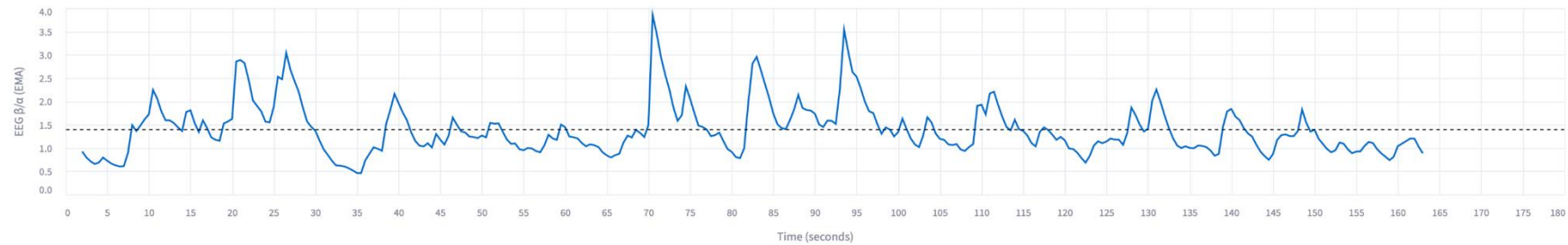
- We provide a two-tier solution:
- **Light Mode (no device needed)**
  - **Free:** Students can add tasks with natural language (e.g., “Math exam next Wednesday”) and instantly get a weekly plan + Today’s Top 3 tasks.
  - **Pro:** Unlocks smart exam prep breakdown, task prioritization, and personalized reminders to make studying structured and stress-free..
- **Pro Mode (EEG + AI):** an advanced version that integrates brainwave data from devices like Muse to deliver precise, science-based insights into focus levels and optimal study times.
- This dual approach lowers the entry barrier for everyday learners while offering a high-accuracy upgrade for ADHD students and those seeking peak efficiency. By combining accessibility with neuroscience, we make learning both **personalized and evidence-driven**.

# Product Demo

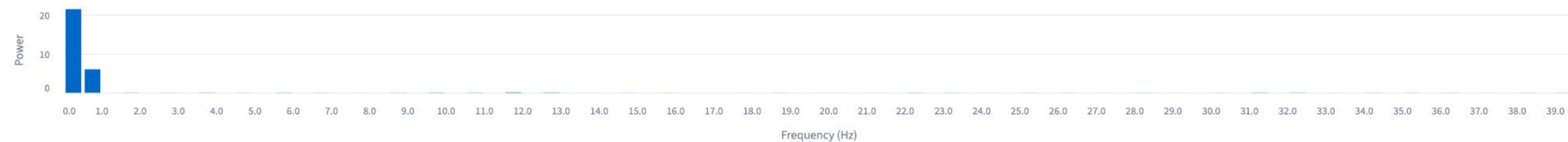
## Muse EEG — Live Attention (optimized)

Stream EEG from Muse via LSL. Throttled UI refresh to reduce flicker. Includes: EMA smoothing, baseline calibration, confidence, power spectrum, task × difficulty logging, hourly recommendations with improvement %, and a Focus Meter (0–100%).

Stopped. Total duration: 02:43



Power Spectrum (0–40 Hz, recent 2 s)



Focus Meter: 5/10 (46%)



Hint: Try slow breathing and reduce distractions.

Stopped. Total duration recorded: 02:43

Current Task

Reading

Difficulty

Easy

▶ Start

⏏ Stop

Export CSV

>  Baseline Calibration

Relative Focus (0–1)

Current  $\beta/\alpha$  (EMA)

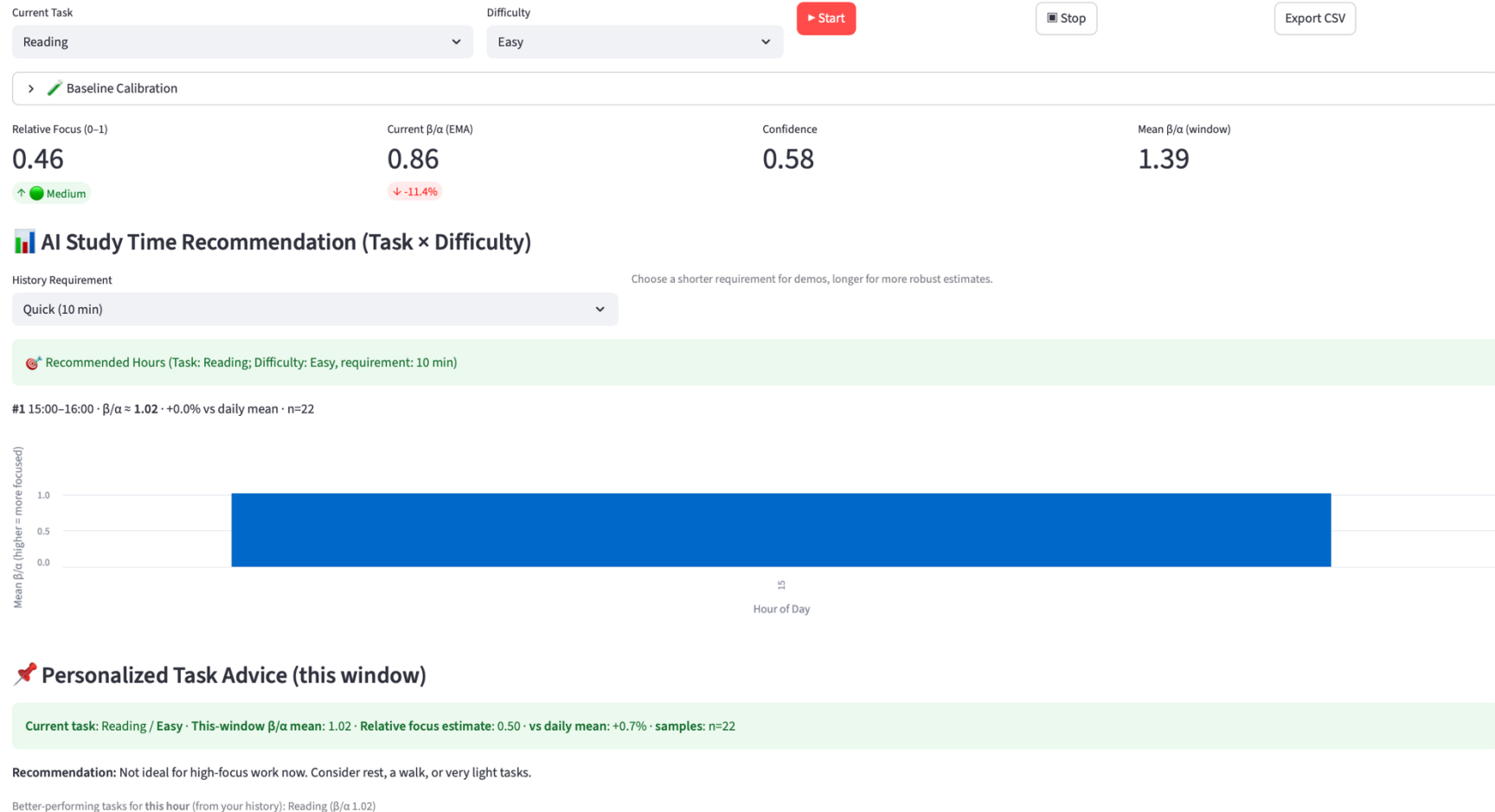
Confidence

Mean  $\beta/\alpha$  (window)

Deploy

This shows our live EEG dashboard: we track attention using  $\beta/\alpha$  ratio, visualize brainwave activity, and provide a **real-time focus meter**.

# Product Demo



Based on EEG data, our AI recommends the best study hours and suggests task difficulty. Here you see a **personalized study time recommendation** and actionable advice for the user

# Market

- Global EdTech market: **>\$340B (2023)**, growing at **15% CAGR**.
- **78M ADHD learners** worldwide + millions of students/young professionals seeking better focus.
- **Initial entry point**: pilot programs at Columbia University & nearby schools.
- **Scale-up strategy**: expand via EdTech platforms and digital health applications.

# Business Model

- **Free:** Light Mode (screen-time focus tracking)
- **Premium SaaS:** EEG × AI, \$10–15/month
- **B2B:** Schools/universities purchase licenses
- **Future:** Licensing algorithms to ADHD/digital health apps and developing **in-ear EEG devices** that integrate with everyday headphones to deliver seamless focus tracking and personalized study recommendations.

# Phase One

- We seek **\$30–50K** to purchase EEG devices, complete the MVP, and run a 50-100 student pilot at Columbia within 12 months.
- We will also handle company registration and IP protection
- **Goal:** Deliver the first MVP and publish early results within 9-12 months.



# Phase Two

- We plan to raise a seed round of **\$200-\$300k**. This funds will scale up hardware to 50-100 devices, expand the team and expand into ADHD and B2B school markets.
- **Goal:** Aim to reach 500+users, validate our business model, and prepare for Series A

# Competition

- **BrainCo, Emotiv, Neurosity** → focus on EEG hardware, require device purchase, mainly provide raw brainwave data.
- These solutions are powerful but limited by **high entry barriers** (cost, setup, hardware dependency).
- **Neurolearn Difference**
  - **Light Mode**: no device required → anyone can try it immediately.
  - **Personalized focus strategies**: actionable study recommendations (when & what to learn), not just EEG graphs.
  - **Scalable software-first approach**: can integrate with existing hardware, and future roadmap includes in-ear EEG for seamless daily use.

# Vision

- Collaborate with Columbia's Zuckerman Institute for research validation
- Expand from students → ADHD support → digital health
- Become the *standard tool for learning optimization* worldwide

# Founder

- **Agnes Chen – Founder & CEO of Neurolearn**
- **Background:** Biology & Neuroscience research, with experience in cell signaling, Alzheimer's, and EEG-based attention studies.
- **Current:** M.S. in Neuroscience & Education, Teachers College, Columbia University.
- **Focus:** Bridging neuroscience and AI to create tools that optimize learning efficiency.
- **Future:** Plans to collaborate with Columbia's **Zuckerman Institute** to refine EEG-based models with world-class mentorship.

# Closing

- *“The Change Starts Now: Unlocking Potential Through Smarter Learning.”*
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