Computer Science NEA

REBORN — An adaptive Habit Tracker

REDACTED

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"Civilization advances by extending the number of operations we can perform without thinking about them." — A. North Whitehead

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1 Introduction

"Make it so easy you can't say no."

James Clear, Atomic Habits [1]

In recent years, human attention has turned into a commodified resource. Algorithms running platforms such as TikTok and Instagram are built to maximise engagement through *variable reward schedules*[2], at the cost of user agency. As a student taking four A-Levels, I face a constant mental load just to plan and maintain positive habits. Nearly all existing habit tracking tools only allow for static tracking or depend on manual organisation and do not support predictive/adaptive behaviour management.

This project, **REBORN**, aims to build an intelligent habit-tracking system that automates scheduling, analyses behavioural risk, and dynamically adapts difficulty. When software handles the heavy planning and adaptation, users can focus their energy on execution.

2 Analysis

2.1 Problem Definition

Many people experience *self-regulation failure* - they want to improve, but the cognitive effort needed to plan and continuously maintain habits often leads to burnout. Technology is not only the largest source of procrastination, but also doesn't provide intelligent ways to reduce this problem. Habit formation, therefore, is both a computational challenge and a psychological one. Tools that can automate planning, predict high-risk periods, and adapt interventions in real time are therefore necessary.

2.2 Users

The primary users of REBORN are students, especially those studying multiple A-Levels and struggling with procrastination and the mental load of planning habits. For this group, automation and predictive intervention allow them to focus on doing the habits instead of the organisation.

The system also addresses a larger audience, such as:

- Professionals who need structured routines and work-life balance.
- People maintaining a regular fitness routine.
- Individuals interested in self-improvement and habit formation.

All of these users encounter self-regulation failure, where manual habit tracking often results in cognitive overload and burnout. By moving planning and predictive analysis to software, REBORN makes habit formation more accessible and responsive to individual circumstances.

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References

[1] J. Clear, *Atomic Habits: An Easy & Proven Way to Build Good Habits & Break Bad Ones*, English. New York, NY, USA: Avery, an imprint of Penguin Random House, 2018, p. 320, First published October 16, 2018; Hardcover edition; Bestseller on habit formation, ISBN: 9780735211292 (cit. on p. 1).

[2] Cognitive Neuroeconomics. "Why social media is so addictive — the science behind dopamine and reward," Accessed: Dec. 9, 2025. [Online]. Available: https://medium.com/cognitive-neuroeconomics/why-social-media-is-so-addictive-the-science-behind-dopamine-and-reward-a276d123dc61 (cit. on p. 1).