Antidoom: Liquid AI's Training Fix for Reasoning Models Stuck Repeating Text

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Antidoom is a training recipe for people who build small AI models that reason step by step. Liquid AI published it on July 7, 2026, four months ago. It targets reasoning loops: a model repeats the same text over and over until it runs out of room and never gives an answer. Antidoom finds the first word of a loop in a model's own failed attempts, then trains a small add-on to prefer other words there, in one pass. Liquid reports that Alibaba's Qwen3.5-4B

looped on 22.9% of test answers (its loop rate) when it always took its likeliest next word (greedy sampling). After Antidoom, the loop rate was 1%.

The code and prompts are public, so the Qwen result can be rerun. The 10.2% to 1.4% drop on Liquid's early LFM2.5-2.6B checkpoint cannot, since it is internal. An outside developer reports that OpenAI's 20-billion-parameter gpt-oss-20b looped on 79 of 200 prompts at high reasoning effort, against 2 after Antidoom. A GitHub user reported loops the detector cannot see, because it only checks repeats up to 1,024 characters.

Other fixes act while the model writes: a repetition penalty lowers the odds of repeated words, and the DRY sampler (an August 2026 paper) penalizes words that would extend an exact repeat. On Qwen3.5-9B, one outside developer reports looping on 48.4% of answers with no fix, 12.4% with a penalty, and 19.6% to 26.8% with the add-on alone.

Read More: a study of a tiny add-on that fixes how models follow chains of references and an open-models roundup that includes Liquid AI's LFM3-1.7B

Sources:

- Reducing Doom Loops with Final Token Preference Optimization (Liquid AI)
- Antidoom code and README (GitHub)
- Don't Repeat Yourself: Stopping Verbatim Loops at Sampling Time (arXiv)
- gpt-oss-20b-antidoom model card (Hugging Face)
- Qwen3.5-9B anti-repetition-loop adapters model card (Hugging Face)

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