

In the Name of God

A Summary of “How Duolingo’s AI Learns What You Need to Learn”

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Class A

In "How Duolingo's AI Learns What You Need to Learn," the authors explore how Duolingo personalizes language learning for its millions of users with an AI system called Birdbrain. Inspired by the benefits of one-on-one tutoring, Birdbrain analyzes user performance data to predict exercise difficulty and personalized lessons to individual strengths and weaknesses. The article details the evolution of Birdbrain, from its initial version using logistic regression, to the current V2 which leverages recurrent neural networks for a more nuanced understanding of user knowledge. Both versions successfully personalize learning, with V2 showing further improvement in engagement and outcomes. Looking ahead, Duolingo aims to create AI that responds not just to knowledge levels but also to preferred learning styles, ultimately making education more adaptive and efficient across various subjects.

Ref: K. Bicknell, C. Brust, B. Settles, “How Duolingo’s AI Learns What You Need to Learn,” *IEEE Spectrum*, Feb. 2023. [Online]. Available: <https://spectrum.ieee.org/duolingo>