11 October 2022

Executive Summary

Product Description/Objective

Lila is an antidote against fear of mathematics. Guided by the deep-time-tested practice of teaching grammar early in language learning, we are designing our ***Lila*** app with the express purpose of letting total beginners discover the grammar of the language of mathematics by themselves. Gamification of the grammar of mathematics in our ***Lila*** app helps students develop a declarative understanding of mathematics simply by playing. ***Lila*** lets us discover, for example, why 1 + 2 = 3? Reinforcement learning algorithms are used to facilitate self-discovery of the definition of SUM (a whole that is completely determined by its parts), along with countless mathematical ideas underlying the formulas used to calculate. Ideas first; calculations later!

Target Audience

Our ***Lila*** app can be used to understand---learn and apply---mathematics by complete novices as well as professors of mathematics consumed by calculations (and blissfully unaware of underlying ideas). As such, humanity is the target audience of ***Lila***: educating the young and enlightening the aging mathematics professors.

Competition

Our ***Lila*** app---a consciously-played game (to be contrasted with spectator sports) designed for self-discovery of the grammar of mathematics by total beginners---has no competition (to the best of our knowledge). Unlike many eLearning apps in the market that are fixated on solving problems in math textbooks, our ***Lila*** enables proper understanding of mathematical ideas.

Opportunities and Challenges

1. Our ***Lila*** app provides a unique opportunity to understand the mathematical content of any subject matter (e.g. physics, biology, and sociology).
2. The main challenge is access to the educational ecosystem (students, educational and research institutions, and the general public at large).

Conclusions

Lila was inspired by the eminently successful literacy drives, which transformed mostly illiterate humanity into almost all of us knowing how to read and write. In making mathematics comprehensible to all without compromising the definiteness of mathematics, ***Lila*** will bring about a tectonic shift in our collective consciousness: from *fear of mathematics* (many mathematicians are also afraid of math) to *universal math literacy*.