

TOOLS FOR THE FUTURE

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Git-like Mutating Knowledge Repository

As a qualitative consequence of capitalism in the academic world, the information in text books are annually shuffled around, reorganized, and edited, as a way to render them different enough to be unresellable. This is a value to the textbook industry, which does this routinely to keep itself afresh to the detriment of the students. On GitHub this situation is reversed to a large extent: users can see which contributors make changes to code, and for what reason and so on. In theory, the textbooks of the future could be written in a manner which allows users to rate their effectiveness. The book that inspired Ramanujan (https://en.wikipedia.org/wiki/Synopsis_of_Pure_Mathematics) is not the same book that inspired others. Yet we haven't studied how to create texts ideal for inspiring mathematical insight in great detail. We could amass a collection of texts which are highly effective at conveying difficult-to-understand concepts, and which are not. By failing to make qualitative advancement based on the success of information transfer, texts in the modern age suffer as they're continuously reorganized for the benefit of book-sellers. This is not how things should be done. Instead, entry to the sciences should be optimized to aid the student. This is yet another way AI can be used to facilitate and accelerate the flow of ideas, rather than shuffle (book) data as a form of obfuscation, which jams the flow of information, frustrating the student and harming the student. "Information jamming" makes it harder to get the message across, and we need to adopt a new policy and system to make it easier to convey all messages, thereby creating a better atmosphere for science.

Mathematical Encyclopedia

Introduce a complete symbol dictionary or encyclopedia for mathematical symbols. If you were to ask someone if there's an encyclopedia of mathematical symbols, including their origin dates and time periods of utility, people would say there isn't one. We have definitions but those definitions are memorized. Mathematical jargon is full of symbols, but they're not always introduced in a way which conveys their history. We are introduced to the symbol without knowing the date of it's first inscription or their original purpose. This makes it challenging for mathematical historians to track the evolution of mathematics as it's evolved over time. Mathematics is regarded by some as a creative endeavor, yet the meanings and functions of mathematical symbols is shrouded in mystery, which we still need to clarify with deep research. If we continue to fail to do this, mathematical explorers risk wasting time rediscovering what is discovered, as well as risk not knowing about what's known. We need to create a better map for the explorers by creating a database of chronological influence to track the evolution of mathematical science, to reduce or eliminate this detective work. With such a map, a mathematician will be able to tell who could have influenced da Vinci, and who couldn't have possibly influenced da Vinci. In essence we would be studying the spread of mathematics as if it were a virus, but in a manner which makes it easier to understand and utilize.

International Educator Ranking System and Learning Platform

Create a transnational virtual educational platform to enhance the range of quality educators. Currently students are confined to the educators available in their local territories, despite us having the power to broadcast a class transnationally. Educators who attain the highest rank should not be imprisoned by a wealthy territory, they should enter the recording studio. Because it is inconceivable for a person to talk to millions of classrooms at once, we should encourage all nations to record the best, deliver the best, and have the best train a small army of subordinate helpers or tutors assigned to local territories, to aid the translation and assimilation of ideas. Currently no such platform exists. I recommend the platform be hackable enough where it can be modified as needed, like a living system, so it can withstand the test of time. This way everyone has the same access to high quality content, and everyone has access to

high quality tutors elected by a school board. Complementary to this, we should create data visualization programs to compare what learning paths look like in this country versus another, as well as ways to rate and track the success rates of learning paths on at least two fronts: merit (sanctioned by experts) and popularity (voted on by non-experts). The ultimate goal here however is very simple: ensure learners have access to quality content wherever they happen to exist so that quality is not for the lucky few.

Dark Data Visualizer to Track Scientific and Historical Mysteries

We need to create a blank spot tracking system to track wherever information is currently being held behind lock and key. This can be historical in value (like Franz Kafka's unreleased writings) or technological in value (Alan Turing's archive not being converted into machine-readable text). In short, we need to use Machine Learning to identify outliers so we can track the spread of ideas and identify emerging technologies. To date, the Department of Commerce has not identified any "emerging and foundational technologies that are essential to the national security of the United States" that are not otherwise controlled. A few simple examples of "dark data" are: "Why Kurt Gödel thought there was a hostile conspiracy to suppress some part of the works of Gottfried Wilhelm Leibniz" or "Why Franz Kafka biographies uniformly neglect to mention Otto Gross (the disavowed disciple of Sigmund Freud) was his college professor and creative collaborator." and the secret designs of computer and technological systems. All truth is context sensitive, so tracking the mysteries is of supplementary importance for the enhancement of knowledge.

Group Authentication for Influential Emerging Technology

Much of the report concerns itself with AI aided influence campaigns, unethical uses of AI to identify targets for coercive control, weapons of mass influence (WMIs), and so on. Arguably humans have been "influenced" by technology since they started reacting to the sun dial, so this modern situation is no different. Any new system we introduce carries with it the risk it will become an engine of negative influence, simply because it displays information that effects humans on a screen. To reduce paranoia, I anticipate it will be necessary to create some kind of group authentication procedure to authorize major change, similar to turning two keys to launch a nuclear bomb. This way the entire (influential) educational apparatus doesn't fall into the hands of a deranged individual. I believe this will make the system in general less disrupting because it is only usurping educational institutions which are antiquated.