

Where is this AITP field headed?

2. How do we get to math AGI? How do we get to systems automatically proving Fermat, etc?

3. Are neural networks the right approach to learning arbitrary algorithms?

4. Another line of thinking is that there was a lot of hype and wrong belief in Transformer scaling, whereas today there is a lot of correction to essentially probabilistically guided reasoning (LM style "chain of thought" with smaller models, perhaps RNNs, etc). Which is getting quite close to ML-guided ATPs?

5. Another line (Francois Chollet, Thibault Gauthier, perhaps Nil?) is that learning guided program synthesis is the way. Can this lead to AIXI-style ever-self-optimizing systems. (OpenCog? Our restricted OEIS experiment?)

6. Where is conjecturing in all this? Where are declarative proofs and (controlled) natural language proofs. Is our human language and structuring the right tool for math? Or will it be replaced by alien systems (e.g. 200000- step long proofs by JD and Bob Veroff, or long non declarative tactical proofs)?

7. Do AITP (learning+reasoning+... combinations) methods extend to other sciences, like physics?

8. How about law? The John McCarthy's (and Leibniz's) idea of objectivity via precise reasoning/computation.

9. Will AI and theorem proving and formal reasoning save the world in terms of all humans being better and more educated reasoners? Or is humanity going to succumb to all sorts of (AI) adversarial attacks and exploits attacking their imperfect irrational evolutionary lizard-like brains (social media algos, etc)?

10. Is verified AI/AGI a possibility?

11. What's the relation between the QED dream and the LLM dream?