

This document contains our responses to an analysis of the Sanskrit patent. The analysis was shared with us by a third party, who requested our comments. They used the AI prompt, "What is halting problem? My friend says he can overcome by applying Sanskrit grammar and quotes viswamitra and panini. I am very confused" as part of the ChatGPT Plus account's deep research. The original analysis is available on our website under the section named Disclosures.

1. <snip>"some parts are context-sensitive, some are context-free"</snip>: this is the crux there and it is difficult unless somebody is some sort of ancient seer to know everything in Sanskrit. This is why we are taking an evolutionary approach here and this is one of the novelties. Also this shows the ChatGPT generated review has a contradiction: it says we can not represent all cases. It is a contradiction in the context of the statement in the snip. Another issue is, as Einstein (attributed to) famously says, "As far as the laws of Mathematics refer to reality they are not certain; and as far as they are certain, they do not refer to reality". So please do not assume we need to take all combinations for real world cases. It is not needed. But which ones to take and which ones to prune - this is the key. Sanskrit grammar along with Mimansa has this key already.

2. ChatGPT accurately re-mentions problems better than what I have said at times. But it did not comprehend the why part of Viswamitra rule. Regarding the solution part, it did not do well in understanding but a good attempt, I would say. I can give selective details under NDA about the other guards. After this it might get clues.

3. I am sharing a discussion in Windows Kernel Drivers forum:

<https://web.archive.org/web/20190907130153/https://community.osr.com/discussion/291568/changes-in-computer-science-syllabus-need-of-the-hour>

As you can see in the evolution of my idea, I was studying the Quantum Mechanics as a possible solution but have found problems there as well. So this is not some NASA research rumor which actually I was not aware till after developing the idea. But Rick Briggs I am aware of and my MCA 5th sem seminar was the same topic.

4. First of all, without understanding Sanskrit grammar - how can anybody comment on its capability? This is why I mentioned the PHOSITA in patent must know the 'why' part of Viswamitra rule. Definitely ChatGPT does not qualify. If so, it should answer the key question asked by me about one of the guards. Definitely the halting problem implications could not be understood by ChatGPT. Halting problem has not just Turing's interpretation. It also has interpretation by John von Neumann and almost nobody talks about this and this could be the reason for the ChatGPT not being unbiased.

5. There is a saying in research. If a geologist shares something novel, everybody agrees except the geologist because he/she knows where it still needs work. If a numerist says something novel, everybody is skeptical except the numerist because only he/she knows how it works. As such it is a difficult stuff other people and hence I resolved to demonstrate instead with the POC with FPGA. In fact, I don't need FPGA. Just using any Linux (except likes of

SE Linux where self modifying code is not easy) we can work on POC. But FPGA helps us remove all doubts as hardware is also now free of all other affects.

6. Regarding Hardware Implementation section: Now-a-days it is very easy. We just need to write the core stuff. Everything else is automated with AWS F1 framework doing the rest. Modern CPUs use many instructions. In our case, it is just Maheswara sutras as we evolve. As mentioned in real world we do not need all stuff and just all laws of mathematics for practical purposes. Without complete real world usecase, it is not going to be taken up by us while feeding. So in this way, yes - we are limiting inputs but for all real world usecases, it is fine as long as they are representable in Sanskrit and the later suffices due to its Sigma Algebra (or concept akin to it).

7. <snip> "The S-matrix bootstrap is a method in quantum field theory requiring solving certain nonlinear constraints - it's basically a tough optimization/search problem in an infinite-dimensional space. It's hard to imagine how Sanskrit grammar directly helps here, except possibly by providing a structured way to navigate the solution space (maybe treating it like parsing a sentence where the equation's terms are components to be matched). If their system can indeed map such equations to a grammar problem, a deterministic inference engine might avoid the combinatorial explosion by cutting off invalid combinations early (like how grammar forbids invalid sentences, it would forbid invalid equation configurations). " </snip>

Hhaah!! This is the crucial main point it correctly got or rather found a bit difficult to work with / comprehend :)

Actually this is the reason, why in my earlier versions of the document I was mentioning (after the episode in Windows Kernel Driver forum and after me subsequently discovering about viswamitra rule and returning to Sanskrit with other guards being discovered which went upto numbers and the hidden algebra behind it) it would take a few decades for this to realize. But all changed during IISc deep learning course. More than an year back, I took a 1 week leave to prepare for an exam, during which, my study got pulled into a series of satisfying findings and some amateur research discoveries. For example, I delved into the commutative property's foundational role in conditional probability, leading to insights on the impossibility of 3D associative division algebra over real numbers. Also have drawn connections from permutations and combinations to system-level paradigms when implementing; and even traced their origins to Sanskrit, enhancing my understanding significantly. But I could not go even more deeper and explore fully on this at that time though wanted. Later, around 2 months back, when studying the preparation material, for an in-campus course on graph theory at IISc, again, the same pull in same direction came but this time I traveled freely till I got some key ideas leading to this patent.

Yes I have not mentioned anywhere in the patent about some stuff on how I connect these (not referring here to the guards stuff shared under DNA). Never will I mention. It is going to be a trade secret.

8. For anybody studying all this it is very important to first comprehend sigma algebra concept. Set of all possible outcomes is sample space. Given a sample space we cannot tell if something is an event. We need Sigma algebra of

it to determine. Means, how you have divided is what matters. How will means - the 'bhedha' is what matters. Btw, why nobody is not even mentioning Sigma algebra anywhere in my discussions? People are studying AI/ML. But hardly anybody understands significance of Sigma algebra. Without spending significant time on this, one should not even study probability. But a very few are discussing about Sigma algebra before going to probability. See, in a 'similar' (note the word I used and hence the single quotes. It is similar - not same) way I would like to say - the Sigma algebra of Sanskrit grammar is different.

9. <snip> For instance, one could imagine an AI system where a neural net does pattern recognition (perception) and then the Sanskrit-grammar engine does logical planning or explanation (inception), all without getting stuck in logical loops. This kind of hybrid AI is a holy grail (combining learning with reasoning), and while the patent doesn't explicitly mention neural nets, the general positioning is that it could enhance machine inference generally. </snip>

Yes I have not mentioned in the patent but mentioned about James Old's experiments with Skinner boxes, and how it lead to neural networks with needed details - all this in the general document I wrote and you are aware of this.

10. <snip> There's a large gap between claiming to map equations to Sanskrit grammar and actually outperforming state-of-the-art numerical solvers or quantum algorithms. </snip>

I have never claimed this in the light of replacing existing systems. But given the same resources, Sanskrit based computational framework definitely outperforms them as we go further in this path. This is why a subset of problems I would like to first solve with FPGA POC. Nobody else can do this within the same hardware constraints - is what I would like to prove. It would take generations to completely resort to Sanskrit and replace current systems. But the core parts like the processing part in specific domains can be quickly replaced and thereby we already have got commercial edge. Definitely way many patents - a series of patents on this technology are awaiting. Again, there is a possibility to speed up things even here just like how some of my exploration and findings made me aware that it can be done faster leading me to file a patent and start a company. But any open collaborations and involving more people to scale - only after the POC as there is a verification for everyone in an easy way.

11. "In conclusion, the Sanskrit-based supercomputing architecture is a bold and highly unconventional proposal." </snip>

The proposal is very conventional if we look at history of parsing and formal interpretations. But to the ChatGPT, which was not trained with the material built on (akin to) Sigma Algebra version not taught in schools and not discussed much in the main stream books, the conclusion is different. Forget about Sanskrit Grammar, how many academic courses have significant portion dedicated to halting problem - not to speak of John von Neumann, Weber et.al., interpretation. After this one can study Turing's interpretation to appreciate it better and understand why it is better. But I doubt if anybody does all this at university level reading, even if I tell, with the current state of academics. But reading and contemplating all these is also pure joy. We need drastic changes in academics - ofcourse, in an evolutionary and harmonious way only - agreeable to all.

12. Btw, as you can see the association of NASA and Sanskrit while has been there as a rumor, probably, later ones - associating with the phrase "Super computers" 'apparently' have come after I started sharing about "Sanskrit based on-board SuperComputer" - the early draft versions of it.