Это архивированный пост. Вы не можете голосовать или комментировать.

искать

этот пост был опубликован 07 Oct 2018

6 очков (75 % голосов «за»)

shortlink: https://redd.it/9m2

6 Is bounded-error quantum polynomial time (BQP) class can be polynomially solved on machine with discrete ontology? (self.math)

отправлено 1 год назад, изменено * автор kiwi0fruit

What is your opinion and thoughts about possible ways to get an answer whether problems that are solvable on quantum computer within polynomial time (BQP) can be solved within polynomial time on hypothetical machine that has discrete ontology? The latter means that it doesn't use continuous manifolds and such. It only uses discrete entities and maybe rational numbers as in discrete probability theory?

upd: by discrete I meant countable.

14 комментариев редактировать поделиться сохранить скрыть удаление nsfw spoiler crosspost

Новая ссылка

Новая текстовая

все комментарии (14)

сортировка: **лучшее**

запретить ответы во входящие (?) **pin to profile**

[–] **jdorje** 4 очка 1 год назад

It's unproven. Opinion? BQP != P.

постоянная ссылка embed сохранить give award

[–] **kiwi0fruit** [S] 2 очка 1 год назад

Yep, it's unproven. I also guess BQP !=P. But do you think discrete theoretical machine (that is not equivalent to the Turing machine) possible that is as fast as QTM?

постоянная ссылка embed сохранить начальный комментарий редактировать запретить ответы во входящие удаление

[–] **jdorje** 3 очка 1 год назад

What can a discrete theoretical machine do that a turing machine cannot?

...and how do you build one?

постоянная ссылка embed сохранить начальный комментарий give award

[–] **kiwi0fruit** [S] 1 очко 1 год назад

math

join 945 227 mathematicians

603 mathematicians online

Показать мой флейр в этом сабреддите. Он выглядит так:

kiwi0fruit (редактировать)

Welcome to /r/math.

This subreddit is for discussion of mathematical links and questions. **Please read the FAQ before posting.**

Homework problems, practice problems, and similar questions should be directed to /r/learnmath, /r/homeworkhelp or /r/cheatatmathhomework. Do not **ask or answer** this type of question in /r/math.

May be have states in superposition defined somewhat alike to discrete probability theory and have entangled states.

постоянная ссылка embed сохранить начальный комментарий редактировать запретить ответы во входящие удаление

[–] **Oscar_Cunningham** 3 очка 1 год назад

In our usual description of quantum computers, they only ever use a discrete subset of their possible states. Is that enough?

постоянная ссылка embed сохранить give award

[–] **kiwi0fruit** [S] 1 очко 1 год назад*

Maybe it's enough...

Oh, I think I got you point now. I understood you that each quantum computer uses a discrete subset of possible states. Even superpositions that happen during computation are also from a discrete subset.

постоянная ссылка embed сохранить начальный комментарий редактировать запретить ответы во входящие удаление

[–] **[deleted]** 1 очко 1 год назад

is there a way to know which states get used beforehand?

постоянная ссылка embed сохранить начальный комментарий

[–] **Oscar_Cunningham** 2 очка 1 год назад

There's a discrete subset of the possible states that no computation will go outside of, but we don't know before a particular computation exactly which states will be used, or else we could just skip to the final state.

постоянная ссылка embed сохранить начальный комментарий give award

[–] **[deleted]** 1 очко 1 год назад

so it's not really "solvable by machine with discrete ontology" then

постоянная ссылка embed сохранить начальный комментарий

[–] **Oscar_Cunningham** 1 очко 1 год назад

How do you mean? Even for a classical Turing machine we can't say what states it's going to occupy until we run the computation.

If you're asking for help learning/understanding something mathematical, post in the *Simple Questions* thread or /r/learnmath. **This includes reference requests** - also see our lists of recommended books and free online resources. Here is a more recent thread with book recommendations.

If you are asking for a calculation to be made, please post to /r/askmath or /r/learnmath.

If you are looking for advice about calculators please try /r/calculators or the simple questions thread.

If you are asking for advice on choosing classes or career prospects, please post in the stickied Career & Education Questions thread.

Image-only posts should be on-topic and should promote discussion; **please do not post memes or similar content here**.

If you upload an image or video, you must explain why it is relevant by posting a comment underneath the main post providing some additional information that prompts discussion.

All posts and comments should be directly related to mathematics. **General political debate is not permitted**. Please be polite and civil when commenting, and always follow reddiquette.

Filters: Hide Image Posts

Show All Posts

Recurring Threads and Resources

Everything about X - every Wednesday

What Are You Working On? - posted Mondays, Wednesdays and Fridays

Career and Education Q&A - Every other Thursday

Simple Questions - Posted Fridays

A Compilation of Free, Online Math Resources.

Click here to chat with us on IRC!

Using LaTeX

To view LaTeX on reddit, install *one* of the following:

MathJax userscript (userscripts need Greasemonkey, Tampermonkey or similar)

TeX all the things Chrome extension (configure inline math to use [; ;] delimiters)

TeXtheWorld Chrome extension

TeXtheWorld userscript

постоянная ссылка **embed** **сохранить**
начальный комментарий **give award**

[–] **[deleted]** 2 очка 1 год назад

but you know what states it can occupy, exactly $S^{|Z|}$ where S is the symbol set, and in a setting where you either know it will halt or have finite memory(that is, every practical setting), it's S^N where N is some big number. But if we can't even make a discrete set of possible computer-states for a finite-memory quantum computer ahead of time, we surely can't compute it in a discrete ontology.

постоянная ссылка **embed** **сохранить** **начальный комментарий**

[–] **kiwi0fruit** [S] 2 очка 1 год назад

> Sure; just construct it entirely out of Deutsch gates with rational coefficients; say one based on the 3-4-5 triangle, which has irrational angles (indeed any Pythagorean triple will work here).

(Sniffnoy@reddit)

постоянная ссылка **embed** **сохранить** **редактировать** **запретить ответы во входящие** **удаление**

[–] **kiwi0fruit** [S] 1 очко 1 год назад

> Not a problem at all. If you replaced the complex numbers by a sufficiently fine discrete grid then BQP would be unchanged. Moreover, every problem in BQP can also be solved in at most exponential time and polynomial space on a classical computer i.e. an ordinary discrete Turing machine that runs for an exponentially long time.

(iyzie@reddit)

постоянная ссылка **embed** **сохранить** **редактировать** **запретить ответы во входящие** **удаление**

[–] **IAmFromTheGutterToo** 1 очко 1 год назад

/r/badmathematics

постоянная ссылка **embed** **сохранить** **give award**

`[; e^{\pi i} + 1 = 0 ;]`

Post the equation above like this:

`[; e^{\pi i}+1=0 ;]`

Using Superscripts and Subscripts

x*_sub_* makes x_{sub}

x*`sup`* and x^(sup) both make x^{sup}

x*_sub_`sup`* makes x_{sub}^{sup}

x*`sup`_sub_* makes x^{sup}_{sub}

Useful Symbols

Basic Math Symbols

≠ ± ∓ ÷ × · − √ ‰ ⊗ ⊕ ⊖ ∅ ⊙ ≤ ≥ ≦ ≧ ≨ ≩ ≺ ≻ ≼ ≽ ⊏ ⊐ ⊑ ⊒ ² ³ °

Geometry Symbols

∠ ∟ ° ≅ ∼ ∥ □ ⫛

Algebra Symbols

≡ ≙ ≈ ∝ ∞ ≪ ≫ ⌊⌋ ∏ ∘ ∏ ∐ Σ ∧ ∨ ∩ ∪ ⊙ ⊕ ⊗ 𝔭 𝔮 𝔯 ⊲ ⊳

Set Theory Symbols

∅ ∖ ∁ ↦ ↣ ∩ ∪ ⊆ ⊂ ⊄ ⊊ ⊇ ⊃ ⊅ ⊋ ⊖ ∈ ∉ ∋ ∌ ℕ ℤ ℚ ℝ ℂ ℵ ℶ ℷ ℸ 𝓟

Logic Symbols

¬ ∨ ∧ ⊕ → ← ⇒ ⇐ ↔ ⇔ ∀ ∃ ∄ ∴ ∵ ⊤ ⊥ ⊢ ⊨ ⫤ ⊣

Calculus and Analysis Symbols

∫ ∬ ∭ ∮ ∯ ∰ ∇ Δ δ ∂ ℱ ℒ ℓ

Greek Letters

$A\alpha$ $B\beta$ $\Gamma\gamma$ $\Delta\delta$ $E\varepsilon\epsilon$ $Z\zeta$ $H\eta$ $\Theta\theta\vartheta$ $I\iota$ $K\kappa$ $\Lambda\lambda$ $M\mu$ $N\nu$ $\Xi\xi$ $O o$ $\Pi\pi$ $P\rho$ $\Sigma\sigma$ $T\tau$ $\Upsilon\upsilon$ $\Phi\phi\varphi$ $X\chi$ $\Psi\psi$ $\Omega\omega$

Other Subreddits

Math

- /r/learnmath
- /r/mathbooks
- /r/cheatatmathhomework
- /r/matheducation
- /r/casualmath
- /r/puremathematics
- /r/mathpics
- /r/mathriddles
- /r/mathmemes

Tools

- /r/mathematica
- /r/matlab
- /r/sagemath

Related fields

- /r/actuary
- /r/algorithms
- /r/compsci
- /r/interdisciplinary
- /r/statistics

сообщество существует 11 лет

отправить сообщение модераторам

МОДЕРАТОРЫ

canyonmonkey
yesmanapple
Geometry/Topology
inherentlyawesome
Homotopy Theory
amdpox Geometric Analysis
AutoModerator
dogdiarrhea
Dynamical Systems
HarryPotter5777
AcellOfllSpades Undergraduate
functor7 Number Theory
edderiofer

о команде модераторов »

НЕДАВНО ПРОСМОТРЕННЫЕ ССЫЛКИ

Open-ended natural selection of interacting code-data-dual algorithms as a property analogous to Turing completeness [this time no redundant info]
1 очко | 16 комментариев

On natural selection of the laws of nature, Artificial life and Open-ended evolution, Universal Darwinism, Occam's razor
59 очков | 104 комментария

On natural selection of the laws of nature, Artificial life and Open-ended evolution, Universal Darwinism, Occam's razor
2 очка | комментировать

Is bounded-error quantum polynomial time (BQP) class can be polynomially solved on machine with discrete ontology?
2 очка | 3 комментария

Is bounded-error quantum polynomial time (BQP) class can be polynomially solved on machine with discrete ontology?

4 очка | 14 комментариев

очистить

активность аккаунта

π