

WikiSim.org

James / AJP

Nov 22-23

@ MathsJam 2025

loading...

wikisim.org/wiki/1080

[backup link](#)

What is WikiSim?

A public space for data, calculations & simulations
— a Wikipedia for imagining futures that add up

How many Neurologists do we need
to meet UK government healthcare guidelines?

wikisim.org/wiki/1068

Why WikiSim?

Help our leaders to
avoid writing cheques they can't cash

- * make it easier (for general population) to figure out
what is going on
what adds up

ENERGY EXPLORER



sim demo

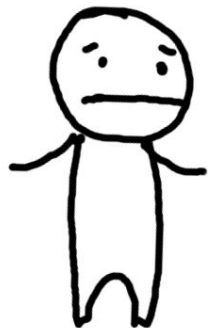
Why WikiSim? part 2

Reduce noise

Reduce temperature

Increase convergence

*Solar can do
everything!!!*



*Solar is
useless!!!*



Why WikiSim? part 2

Solar is good in
some cases bad
in others

*Solar can do
everything!!!*



*Solar is
useless!!!*



Please get involved!

[WikiSim.org](https://Wikisim.org)

Add data & calcs (easy / very easy!)

Build a sim (very hard!)

Help build WikiSim... github.com/wikisim

Thank you!

Would you like to build it?

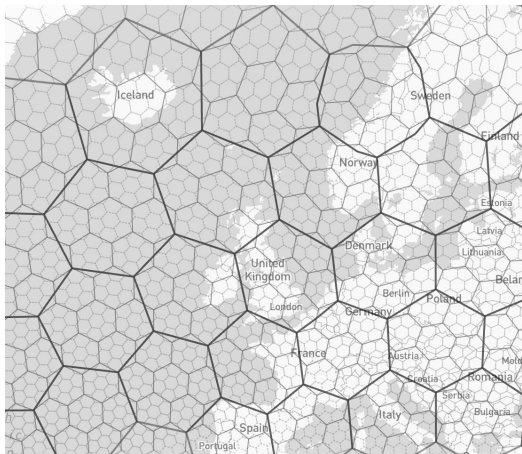
Search

Adding temporal & spatial data

h3geo.org



Snyder equal-area h3 possible?



16 JOHN P. SNYDER

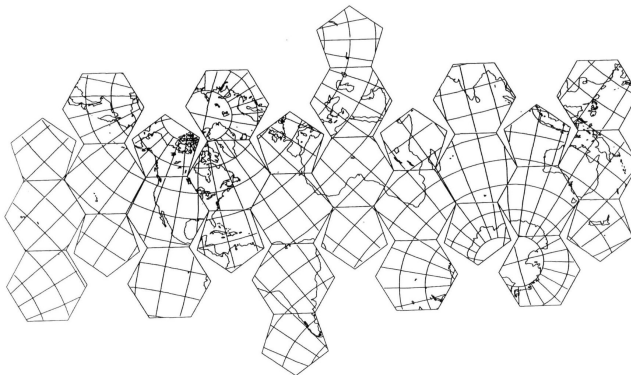


FIGURE 7. Equal-area truncated icosahedron, oblique aspect, North Pole at +45°, -90° on normal aspect.

Finally, $\beta_0 = 1 - h$, and $\beta_1 = h - \beta_2$.

Inverse

The inverse formula is lengthy, but follows straightforwardly from the forward formula. Contrary to Snyder's original paper¹ and a paper that followed³, it does have a closed form solution.

Let $c_{ij} = \hat{\mathbf{v}}_i \cdot \hat{\mathbf{v}}_j$, and $s_{ij} = \sqrt{1 - c_{ij}^2} = \|\hat{\mathbf{v}}_i \times \hat{\mathbf{v}}_j\|$.

$$h = 1 - \beta_0$$

$$a = \frac{\beta_2}{h} A(\hat{\mathbf{v}}_0, \hat{\mathbf{v}}_1, \hat{\mathbf{v}}_2)$$

$$S = \sin(a)$$

$$C = 1 - \cos(a)$$

$$f = S|\mathbf{V}| + C(c_{01}c_{12} - c_{20})$$

$$g = Cs_{12}(1 + c_{01})$$

$$q = \frac{2}{\arccos(c_{12})} \arctan\left(\frac{g}{f}\right)$$

$$\hat{\mathbf{p}} = \text{Slerp}(\hat{\mathbf{v}}_1, \hat{\mathbf{v}}_2; q)$$

$$t = \frac{\arccos(1 + h^2(\hat{\mathbf{v}}_0 \cdot \hat{\mathbf{p}} - 1))}{\arccos(\hat{\mathbf{v}}_0 \cdot \hat{\mathbf{p}})}$$

$$\hat{\mathbf{v}} = \text{Slerp}(\hat{\mathbf{v}}_0, \hat{\mathbf{p}}; t)$$

Special cases

Some special cases simplify significantly. For brevity I'll just do the forward formulas. For both of these, let $\mathbf{z}_0 = [0, 0]$, $\mathbf{z}_1 = [1, -1]$, and $\mathbf{z}_2 = [1, 1]$, and define $\mathbf{z} = [x, y]$ in terms of barycentric coordinates: $\mathbf{z} = \sum \mathbf{z}_i \beta_i$, or in terms of components directly,

$$x = \beta_1 + \beta_2 = h,$$

$$y = -\beta_1 + \beta_2 = 2\beta_2 - h = h \left(2 \frac{A(\hat{\mathbf{v}}_0, \hat{\mathbf{v}}_1, \hat{\mathbf{p}})}{A(\hat{\mathbf{v}}_0, \hat{\mathbf{v}}_1, \hat{\mathbf{v}}_2)} - 1 \right)$$

Also recall [the formula for a vector in terms of latitude and longitude](#):

<https://brsr.github.io/2021/08/31/snyder-equal-area.html#fn:Snyder>

<https://cuberule.com>

The Cube Rule of Food

For identifying dishes based on starch locations



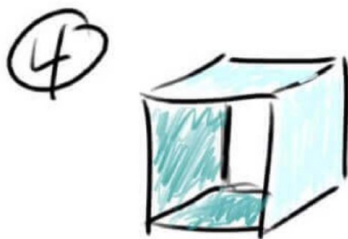
Toast



Sandwich



Taco



Sushi



Soup/Salad
w/ Bread Bowl



Calzone

① Toast

popular examples



pizza



nigiri sushi



pumpkin pie slice
(bent toast)



quesadilla
(non-folded)



toast
(made and photographed
by me, Ryan. it was okay)



victoria
sponge cake

④ Sushi

popular examples



falafel wrap



pigs in a blanket



enchilada



deep-dish pizza



salad
(in a bread bowl)

⑤ Quiche

bonus round



key lime pie

① Salad

popular examples



steak



mashed potatoes
(creamy & smooth)



flan

Sensemaking in Complexity

How do the members in our societies make sense of the issues, policies, events, etc on which their flourishing depends?

Some sense making failures

How ex-council tenants make over £200k selling homes back to councils

Big Issue investigates the Right To Buy properties sold back to councils for massive profits, just years after being bought at a discount.

www.bigissue.com

10

8

35

...

24d

If your social rent is £2,000 less than the house would rent for on the open market, then it's basically worth it _for the council_ if you exercise RtB and then sell it back to them for £270k, provided you then live for a little over a decade longer in a different house you own

2

10

...



AJP2 (James)

@ajp2.bsky.social

Hi [redacted], thank you for your insights. I normally get them but I don't understand this one yet. The council avoided any costs for that period of time but they didn't evict the council tenant and then rent it out on the open market. So the difference between the rental rates is irrelevant, yes?

2025-10-13 <https://bsky.app/profile/hern.bsky.social/post/3m336qwwuac2w>

Scenario 1: Council keeps home			-£44,462	Scenario 2: Council sells & buys back home			-£269,950
Annual	maintenance & utilities costs	rent charged		Even with an assumption that no rent is charged by the council, the scenario where the home was sold and bought back is still worse			
	5000	0					
% increase	3%	3%					
year	maintenance & services cost	rent charged					
	2014	5000	0				
	2015	5150	0				

There is a cruel link between our perceived scientific understanding of a medical disorder and its assigned legitimacy. As neurology textbooks fill up with arrow diagrams showing linear cascades of pathology, conditions such as epilepsy and migraine have slowly shed their stigma of degeneracy, weakness of mind or moral defect. However, disorders with non-linear pathophysiology that escape our intuition, and especially those that affect the way subjective experience and volition emerge (sometimes called mind-body disorders, and, less accurately, medically unexplained symptoms), have a particularly hard case to make in defence of their legitimacy. Cultural assumptions around subjective awareness and wilful behaviour do not align well with neuroscientific explanations, and cannot properly accommodate disorders such as dissociative seizures. The unfortunate conflation of explainability, legitimacy and authenticity means that public discourse around mental illness is often sidetracked towards debates of scientific theories as they seesaw between being comprehensive and being comprehensible. In contrast, public debates around cancer or stroke, for example, will usually focus on service provision and treatment options, and rarely on the remaining uncertainties of disease mechanism. It is a scientist's job to focus on the

SELECT ONE

How many zeroes are in a trillion?

Nine zeroes or 1,000,000,000

15% ✕

12 zeroes or 1,000,000,000,000

67% ✓

Six zeroes or 1,000,000

1% ✕

15 zeroes or 1,000,000,000,000,000

18% ✕

✓ CORRECT!

SELECT ONE

The average US worker earns \$58,000 per year.

How long would it take them to earn \$1 trillion?

A billion years

8,385 years

200,000 years

17.24 million years

The average US worker earns \$58,000 per year.

How long would it take them to earn \$1 trillion?

A billion years

9% ✕

17.24 million years

42% ✓

200,000 years

28% ✕

8,385 years

21% ✕

✓ CORRECT!

What information do we collect from this quiz?

SELECT ONE

A condition of Musk's pay deal is getting one million "Robotaxi" vehicles on the road.

How many Robotaxis could Tesla make with \$1 trillion?

33,333,333

500

782,623

1 million

A condition of Musk's pay deal is getting one million "Robotaxi" vehicles on the road.

How many Robotaxis could Tesla make with \$1 trillion?

33,333,333

49% ✓

1 million

34% ✕

782,623

15% ✕

500

2% ✕

✓ CORRECT!

What information do we collect from this quiz?

SELECT ONE

One million seconds is about 11.5 days.

How long is one trillion seconds?

500 years

31,546 years

9,782 years

Two million years

SELECT ONE

One million seconds is about 11.5 days.

How long is one trillion seconds?

500 years

13% ✕

31,546 years

66% ✓

9,782 years

17% ✕

Two million years

23% ✕

✓ CORRECT!

\$1 trillion is roughly the same GDP as which country?

South Africa

Russia

Switzerland

USA

One million grains of rice weighs roughly the same as a four-year-old child.

How much does one trillion grains of rice weigh?

Select all that apply

One million four-year-old children

6,500 Cybertrucks

An average sized comet

Ten thousand lions



Interviewed in
March,
published in July

Website
relaunched in
June

www.newstatesman.com/scienc...

Orcom found that 6 per cent of children aged eight to 14 had visited an online pornography site or app over a month-long period.

Fine. But the unintentional by-product is that the most innocuous services might be the worst hit. The Wikimedia Foundation, Wikipedia's non-profit operator, is mounting a legal challenge to the bill, arguing that the changes will compromise the site's commitment to privacy and freedom of speech. This is not good news, said the owner of The Hamster Forum, "Home Of All Things Hamstery," back in March. "I would probably need a lawyer and team of experts to be able to fully comply with everything... I am going to have to close the forum... I'm suggesting everyone joins Instagram and follows our account on Instagram instead."

The forum's owner was quoted £2400 a year to use an external age-verification service in compliance with the Act. This is a big chunk of average part-time webmaster's income.  

<https://www.newstatesman.com/science-tech/big-tech/2025/07/big-tech-is-the-only-winner-of-the-online-safety-act>

DuckDuckGo

Duck.ai

The Hamster Forum, "Home Of All Things

All Images News Videos Maps Search Assist

Protected United Kingdom Safe search

The Free Speech Union
<https://freespeechunion.org> > hamster-forum-and-...

Hamster forum and local residents' websites shut down by new internet ...

20 Mar 2025 · "While this forum has always been perfectly safe, we were unable to meet [the compliance requirements of the Act]," wrote the operators of The Hamster Forum,...

Canary
<https://www.thecanary.co> > uk > analysis > 2025 > 07...

Online Safety Act: bungs for big tech that do not protect kids


31 Jul 2025 · As the New Statesman reported: "This is not good news," said the owner of The Hamster Forum, "Home Of All Things Hamstery," back in March.

spiked
<https://www.spiked-online.com> > 2025 > 04 > 04 > h...

How the Online Safety Act shut down a hamster forum - spiked

4 Apr 2025 · A particularly galling example is the Hamster Forum. Describing itself as 'the home of all things hamstery', it is the last place you'd expect to feel 'unsafe'...

Videos for The Hamster Forum, "Home Of AL...



THE HAMSTER FORUM

The home of all things hamstery

Menu Forum Log in Register

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Filters





Photo comp winner Tino

Maz · Friday at 6:34 AM · 1 min read · Hamster Care

cage set up 2025



Hamster cage set up on a budget

Maz · Jun 15, 2025 · 4 min read · Hamster Care

OPEN AGAIN

We have some exciting news to share. The Hamster Forum is open again. It has been a huge amount of work! Registration is open.

The Hamster Forum is open

Maz · Jun 13, 2025 · 1 min read · Hamster Care

Oversimplification: a kind of misattribution by attributing most of the change in X to cause Y, when actually the elephant in the room is cause Z but is not mentioned. Technically they only said "contribute to..." but if you don't mention any other contributing factors then it's like saying the dampness weakened that mortar and that's why the house fell down; whilst ignoring the mag 7 earthquake whose epicentre was under the house.

- Economically, the geographic, temporal and multiemployer flexibility facilitated by the internet and increasingly by telecommuting have expanded opportunities for many workers in developing countries or who fit poorly in traditional labor markets. Yet they have largely been unmatched by the emergence of appropriate labor market institutions (such as unions and labor regulations) that allow workers to share in the potential benefits of these arrangements. Thus, they have tended to raise workplace precarity and contribute to the “hollowing-out” of the middle class in many developed countries^[6].