

THINK smol.

EndSummerCamp 2024



Think small.

Our little car isn't as much of a novelty
any more.
A couple of dozen college kids don't
try to squeeze inside it.
The gas at the gas station doesn't add
where the gas goes.
Nobody even steers at our shape.
In fact, some people who drive our little

Bever don't even drive 32 miles to the gas-
tin to bring my great grand.
Or using five gallons of oil instead of five
worth.
Or never needing anti-freeze.
Or getting up 40,000 miles on a set of
tires.
That's because since you get used to

some of our statistics, you don't even
think about them any more.
Except when you squeeze into a good
parking spot. Or renew your small insur-
ance. Or pay a small repair bill.
Or trade in your old 1991 for a
new one.
Think it over.





Think small.

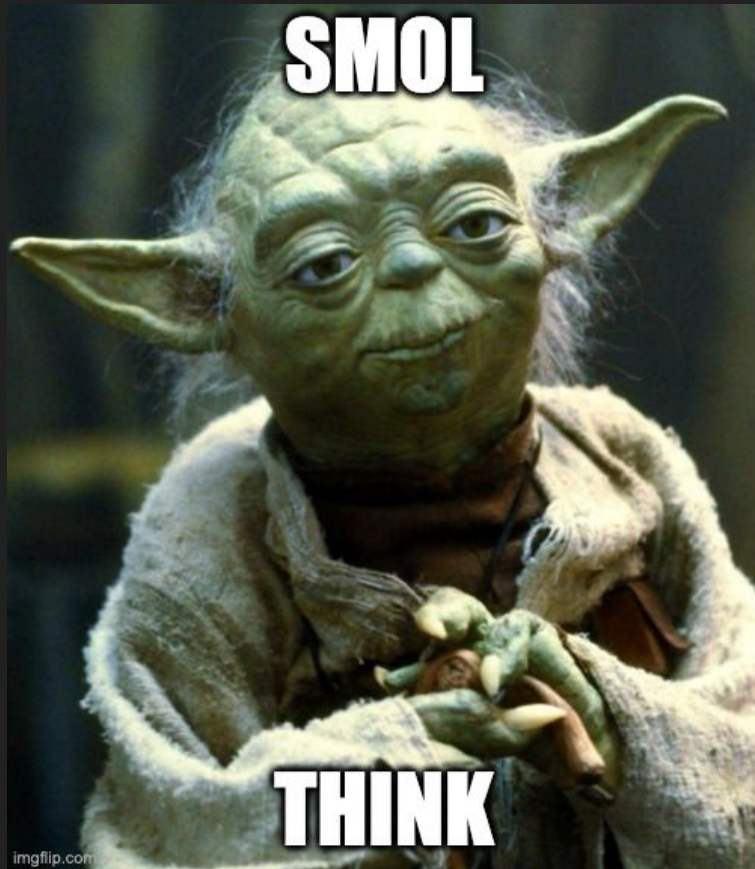
Our little car isn't so much of a novelty any more.
A couple of dozen college kids don't try to squeeze inside it.
The guy at the gas station doesn't ask where the gas goes.
Nobody even mows at our shops.
In fact, some people who drive our little

Beetle don't even drive 20 miles to the gas station to get any gas.
Or using five pairs of oil instead of two worth.
Or never needing anti-freeze.
Or making up 40,000 miles on a set of tires.
That's because once you get used to

some of our accessories, you don't even think about them any more.
Except when you squeeze into a small parking spot.
Or renew your small insurance.
Or pay a small repair bill.
Or trade in your old VW for a new one.
Think it over.



!=



imgflip.com



Hi.

2000

```

MMMMML  MMM  WMMMM  AMMMMMMA
MMMMML  MMMM  AMMMMMMA  WMMW  AMMMMMMA
MMMMM  W  MMMM  MPA  WMPA  WMM  AMW  MMMM
MMMMMM  AWWWW  MMMMMMMMMM  AMM  WMMMMMMMMW
MMMMMMMM  WMMMM  WWW  WMMMMMMMMW  WMM  AMMW
WMMMMW  WW  WMMV  WMMV

```



REVERSING RESOURCES

Zombies are not allowed here: if you are, please go away immediately. Thank you very much :-)

```

-WhatYouSeeIsWhatYouChose-WhatYouSeeIsWhatYouChose-WhatYouSeeIsWhatYouChose-
POWERBROWSING
v1.1.0
+mal, 20040715
-WhatYouSeeIsWhatYouChose-WhatYouSeeIsWhatYouChose-WhatYouSeeIsWhatYouChose-

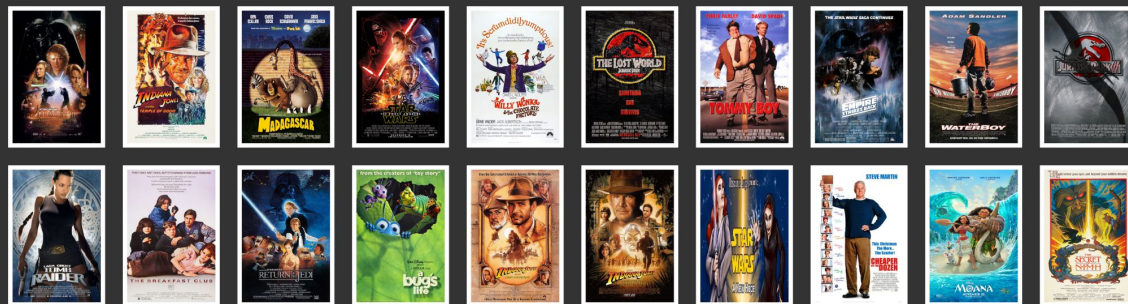
```

2004

2002



2016



moviESC

2014

A simple, personal movie search engine, purposely built for the Powerbrowsing talk at ESC2K14 (<http://www.endsummerncamp.org/>).

2019



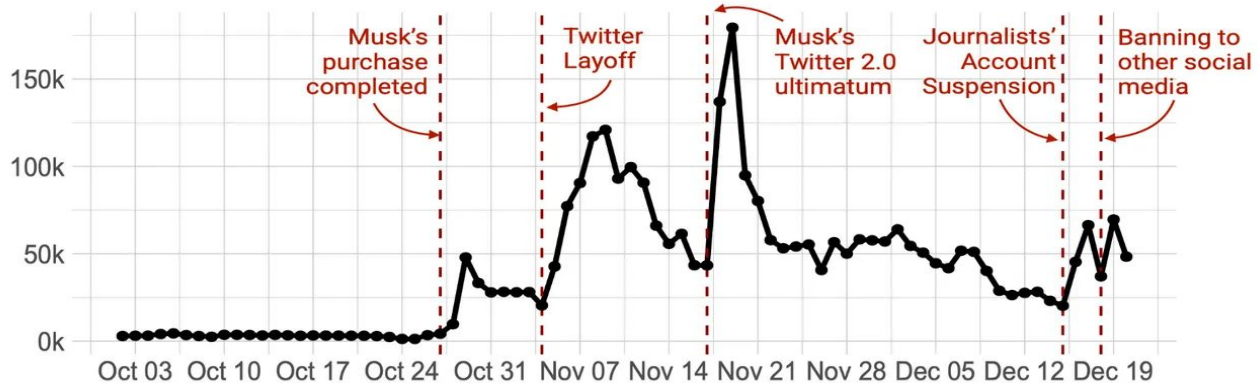


October 26 2022

#TwitterMigration

New mastodon accounts (daily)

Data from @mastodonusercount@bitcoinhackers.org



Six months earlier...

☰ **CNN Business** Markets Tech Media Calculators Videos

Elon Musk to buy Twitter in \$44 billion deal

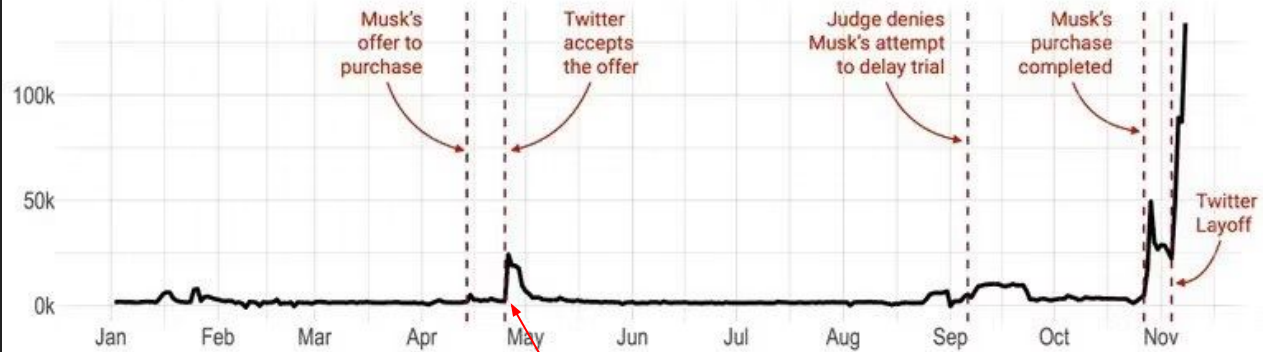
 By [Clare Duffy](#), CNN Business
🕒 5 minute read · Updated 8:44 PM EDT, Mon April 25, 2022

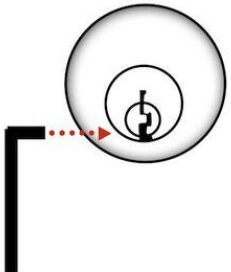


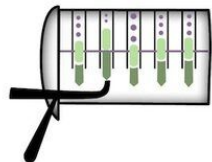
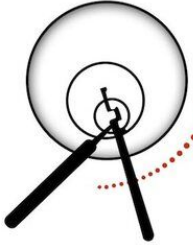
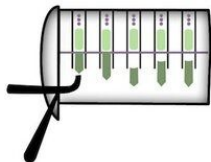



New mastodon users (daily)

Data from @mastodonusercount@bitcoinhackers.org



When a door closes...

HOW to		
with Atlas Obscura	PICK a LOCK	and Schuyler Towne
<p>1 Insert bent tension wrench into the bottom of the keyway.</p>	<p>2 Apply torque to the tension wrench, turn the plug of the lock slightly to the right or left.</p>	<p>3 Keeping the lock slightly turned with the tension wrench, insert the pick.</p>
		
<p>4 With a pick, feel around for the "weirdest pin," and apply light pressure to lift it.</p>	<p>5 Once the "weirdest pin" is set, apply more torque on the tension wrench rotate slightly more.</p>	<p>6 Continue setting each pin (in order of weirdest to least weird), turning the plug as you go.</p>
		
<p>7 Once you set the final pin, the plug will be free to rotate, just as if the proper key had been inserted.</p>		
		

Communities of practice

"groups of people who share a concern or a passion for something they do and learn how to do it better as they interact regularly"

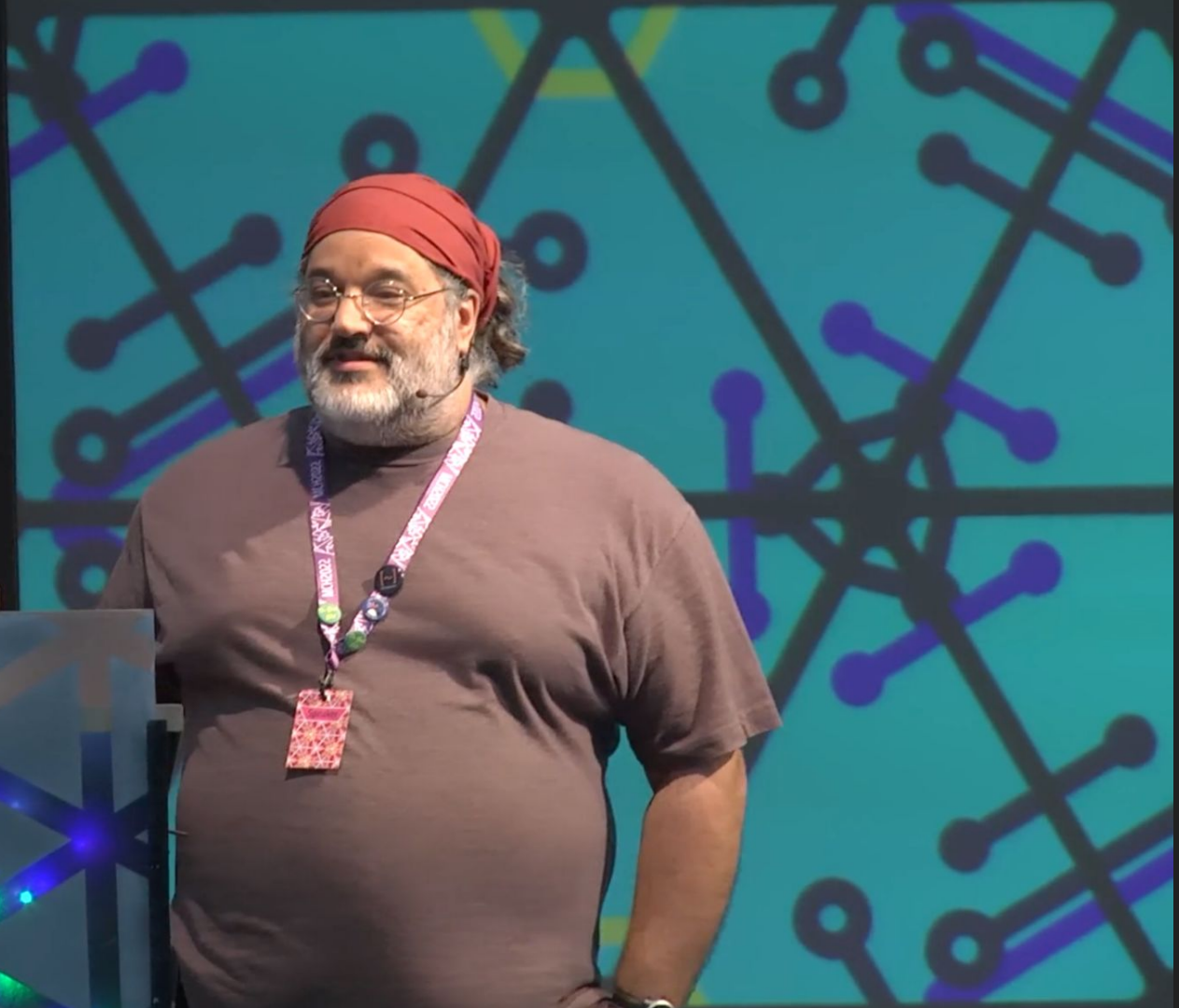
Etienne and Beverly Wenger-Trayner, 2015

Outline

- small Internet technologies
- a smol personal project: [PicoGopher](#)
- smol AI

“I wanna talk to you a little bit about the places on the Internet that don’t suck”

[James Tomasino, 2022](#)



Motivations



Pubnixes

“What we wanted to preserve was not just a good environment in which to do programming, but a system around which a fellowship could form. We knew from experience that the essence of communal computing, as supplied by remote-access, time-shared machines, is not just to type programs into a terminal instead of a keypunch, but to encourage close communication.”

D. Ritchie, “[The Evolution of the Unix Time-sharing System](#)”

sdf.org

- “a community platform for inspiring, facilitating and implementing new ideas”
- bboard
- chat
- mastodon instance
- minecraft server
- radio
- web/gopher/gemini hosting

```
> ssh new@sdf.org
```

Gopher

- distributed document search and retrieval protocol ([RFC1436](#), 1993)
- TCP connections
- *gophermaps* as menus to help browsing different *items*

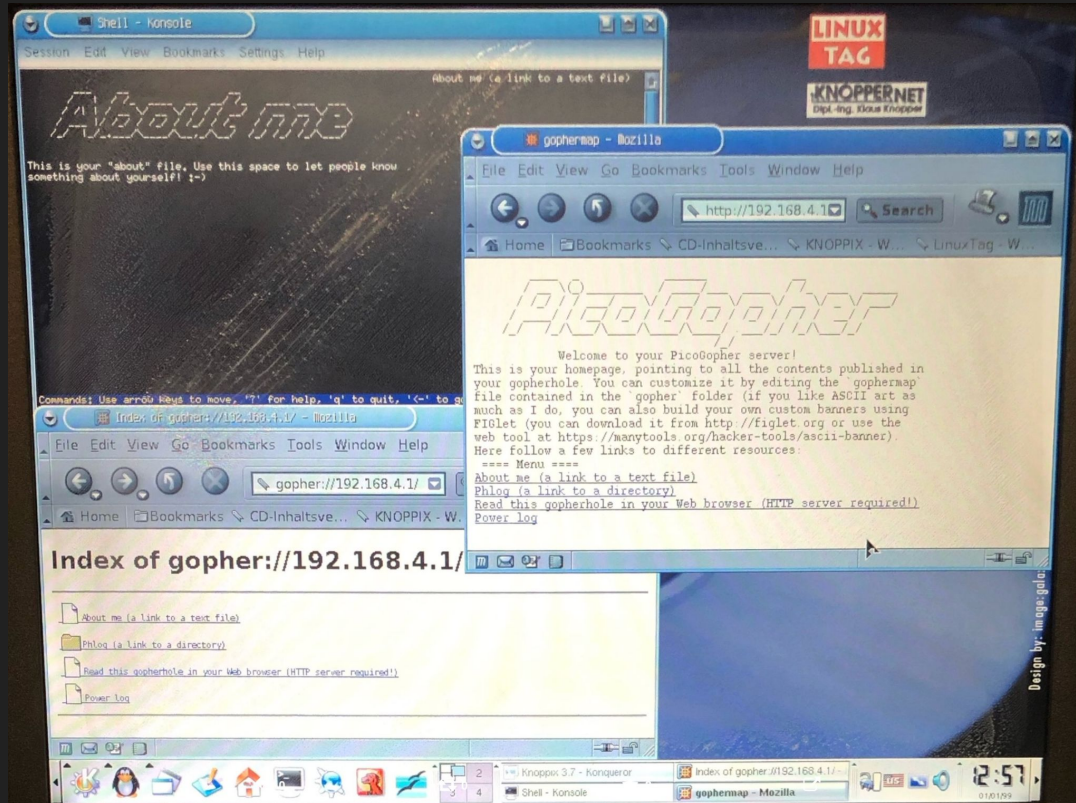
Canonical types	
0	Text file
1	Gopher submenu
2	CCSO Nameserver
3	Error code returned by a Gopher server to indicate failure
4	BinHex -encoded file (primarily for Macintosh computers)
5	DOS file
6	uuencoded file
7	Gopher full-text search
8	Telnet
9	Binary file
+	Mirror or alternate server (for load balancing or in case of primary server downtime)
g	GIF file
I	Image file
T	Telnet 3270

Non-canonical types	
d	Doc. Seen used alongside PDF and .doc files
h	HTML file
i	Informational message, widely used. ^[25]
p	image file "(especially the PNG format)"
r	document RTF file (" Rich Text Format ")
s	Sound file (especially the WAV format)
P	PDF (Portable Document Format) file
X	XML (Extensible Markup Language) file

Gophermaps

```
(base) mala@Davides-MacBook-Pro llamafiles % nc -v gopher.3564020356.org 70
Connection to gopher.3564020356.org port 70 [tcp/gopher] succeeded!
/
i
i          null.host          1
i      null.host          1
i      MMMML      MMM      WMMW      null.host          1
i      MMMMML      MMMM      AMMMMMMA      WMMW      AMMMMMMA      null.host          1
i      MMMMM      W      MMMM      MMA      WMMA      WMM      AMW      MMMM      null.host          1
i      MMMMMM      AWWWW      MMMMMMMMMM      AMM      WMMMMMMMMW      null.host          1
i      MMMMMMMM      WMMMM      WWWW      WMMMMMMMW      WMM      AMMW      null.host          1
i      WMMMMW      WV      VMMV      WMMV      null.host          1
i      null.host          1
i      null.host          1
i      +mala's gopherhole      null.host          1
i      null.host          1
i      ==== Last updated: August 2024 ====      null.host          1
i      null.host          1
i      i ==== About ====      null.host          1
0Joshua /joshua gopher.3564020356.org 70
0+mala /me gopher.3564020356.org 70
i      null.host          1
i      i ==== Phlog ====      null.host          1
02024-09-07 - Swimming /phlog/2024-09-07 - Swimming gopher.3564020356.org 70
02024-08-30 - Old Computer Challenge /phlog/2024-08-30 - Old Computer Challenge gopher.3564020356.org 70
02024-08-28 - Sympathy for the Devil /phlog/2024-08-28 - Sympathy for the Devil gopher.3564020356.org 70
02024-08-25 - 100 Days To Offload /phlog/2024-08-25 - 100 Days To Offload gopher.3564020356.org 70
1Archive /phlog gopher.3564020356.org 70
i      null.host          1
i      i ==== PicoGopher ====      null.host          1
02022-12-04 - PicoGopher - here comes the sun /phlog/2022-12-04 - PicoGopher - here comes the sun gopher.3564020356.org 70
02022-11-25 - PicoGopher - take the power back /phlog/2022-11-25 - PicoGopher - take the power back gopher.3564020356.org 70
02022-11-14 - PicoGopher - the more we are /phlog/2022-11-14 - PicoGopher - the more we are gopher.3564020356.org 70
02022-11-05 - PicoGopher - free bird /phlog/2022-11-05 - PicoGopher - free bird gopher.3564020356.org 70
02022-10-29 - PicoGopher - sudo make a server /phlog/2022-10-29 - PicoGopher - sudo make a server gopher.3564020356.org 70
02022-10-23 - PicoGopher - Introduction /phlog/2022-10-23 - PicoGopher - Introduction gopher.3564020356.org 70
i      null.host          1
i      null.host          1
i      i ==== Ch35t ====      null.host          1
02023-09-18 - Ch35t - Introduction /phlog/2023-09-18 - Ch35t - Introduction gopher.3564020356.org 70
.
```

What does it look like?

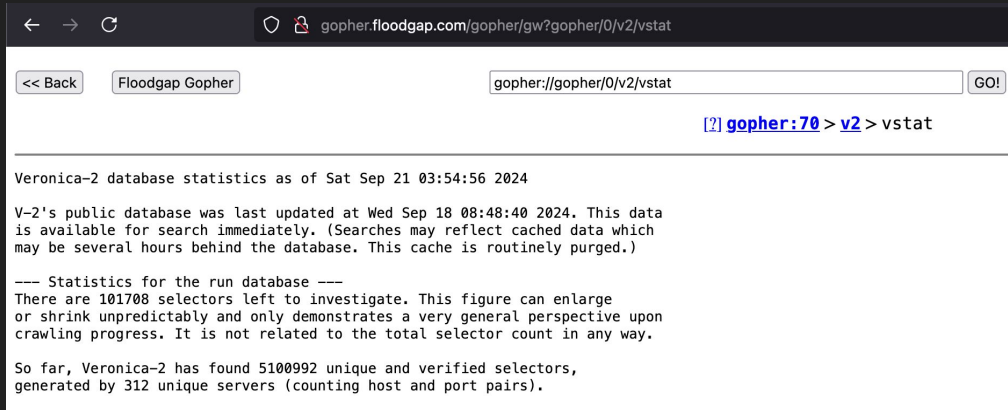


Size of the gopherspace

20240921:

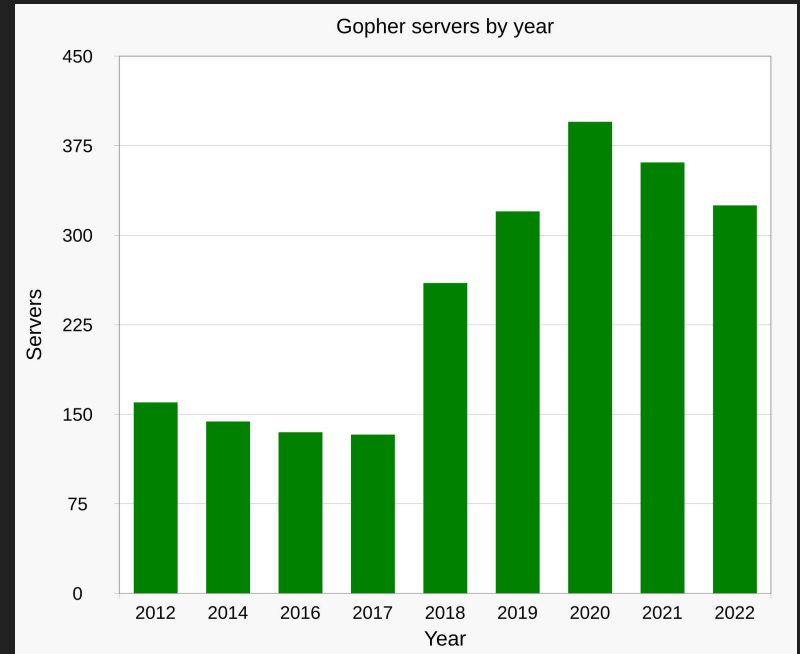
312 unique servers

5,100,992 selectors



The screenshot shows a web browser window with the URL `gopher.floodgap.com/gopher/gw?gopher/0/v2/vstat`. The page content includes:

- Navigation buttons: << Back, Floodgap Gopher, GO!
- Search input: `gopher://gopher/0/v2/vstat`
- Link: [\[?\] gopher:70 > v2 > vstat](#)
- Text: "Veronica-2 database statistics as of Sat Sep 21 03:54:56 2024"
- Text: "V-2's public database was last updated at Wed Sep 18 08:48:40 2024. This data is available for search immediately. (Searches may reflect cached data which may be several hours behind the database. This cache is routinely purged.)"
- Text: "--- Statistics for the run database ---"
- Text: "There are 101708 selectors left to investigate. This figure can enlarge or shrink unpredictably and only demonstrates a very general perspective upon crawling progress. It is not related to the total selector count in any way."
- Text: "So far, Veronica-2 has found 5100992 unique and verified selectors, generated by 312 unique servers (counting host and port pairs)."

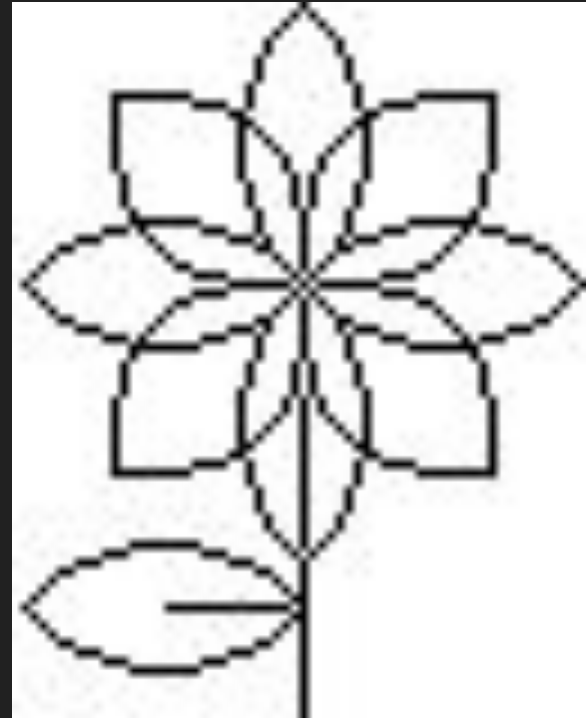


Gemini

- protocol [introduced in 2019](#), not submitted to IETF yet
- main features:
 - TLS
 - Soft wrapping by default
 - mime-type in header
 - gemtext format (markdown-like)
 - philosophical spec (avoid extensibility)
- geminspace size:
 - 2021/09: 1200 servers, 270,000 selectors
 - 2022/07: 2560 servers, 417,102 selectors
 - [2024/07](#): 3900 servers, 600,000 selectors

Permacomputing

- Care for life
- Care for the chips
- Keep it small
- Hope for the best, prepare for the worst
- Keep it flexible
- Build on a solid ground
- Amplify awareness
- Expose everything
- Respond to changes
- Everything has a place



Computing with limits

workshop, manifesto



← → ↻ 🔍 <https://solar.lowtechmagazine.com/low-tech-solutions/> 📄 ☆ 📧 📄 📄 📄 📄 📄

LOW←TECH MAGAZINE

This is a solar-powered website, which means it sometimes goes offline *
🌐 [About](#) | [Low-tech Solutions](#) | [High-tech Problems](#) | [Obsolete Technology](#) | [Offline Reading](#) | [Archive](#) | [Donate](#) | [NTM](#) 📧 📄

Low-tech Solutions

Interesting possibilities arise when you combine old technology with new knowledge and new materials, or when you apply old concepts and traditional knowledge to modern technology.



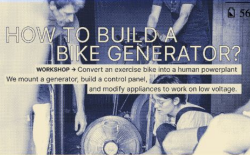
Low-tech Magazine: The Ebooks
Low-tech Magazine now offers its complete book collection in epub format.
July 23, 2024
541.41KB



How to Build a Small Solar Power System
This guide explains everything you need to know to build stand-alone photovoltaic systems that can power almost anything you want.
December 27, 2023



Test our Bike Generators in Paris, Rotterdam, and Barcelona
Low-tech Magazine built a bicycle generator for an exhibition on energy at the Pavillon d’Arsenal in Paris, now open to the public. Our two other bikes can be seen and experimented with in Rotterdam and Barcelona.



Workshop in Rotterdam: How to Build a Bike Generator
From 10 to 14 October, Low-tech Magazine holds a free workshop where we will build a bicycle generator together.
October 6, 2023

Local-first (why not?)

- [Local-first software](#)
- Yesterday: [TWO](#)
- Today: [Ploum's offpunk](#)

Smol complexity / dependencies

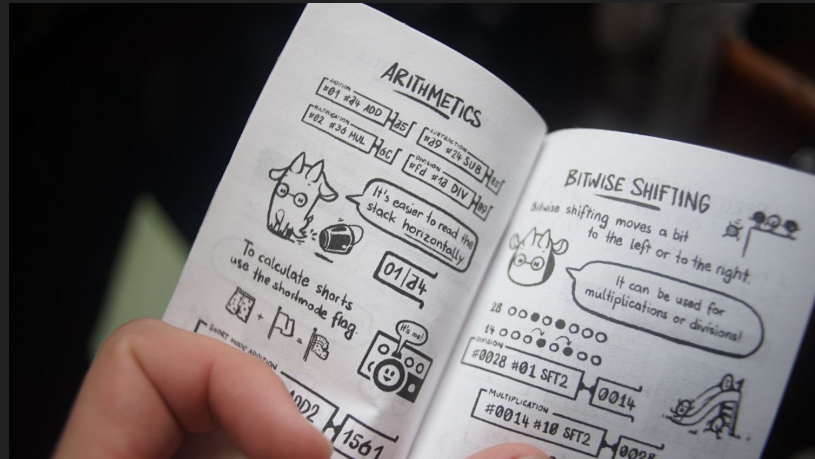
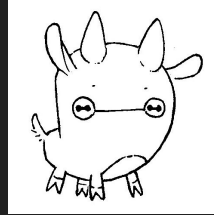
[Uxn](#) (see [talk!](#))

Uxntal Opcodes

Uxn has 64kb of memory, 16 devices, 2 stacks of 256 bytes, 5-bits opcodes and 3 modes. The list below show the standard opcodes and their effect on a given stack `a b c`. **PC**: Program Counter, **I**: Return Stack, **[M]**: Memory, **[D+*]**: Device Memory, **a8**: a byte, **a16**: a short.

```
LIT a b c [PC]
JCI a b (c8)PC+=[PC]
JMI a b c PC+=[PC]
JSI a b c | PC PC+=[PC]
```

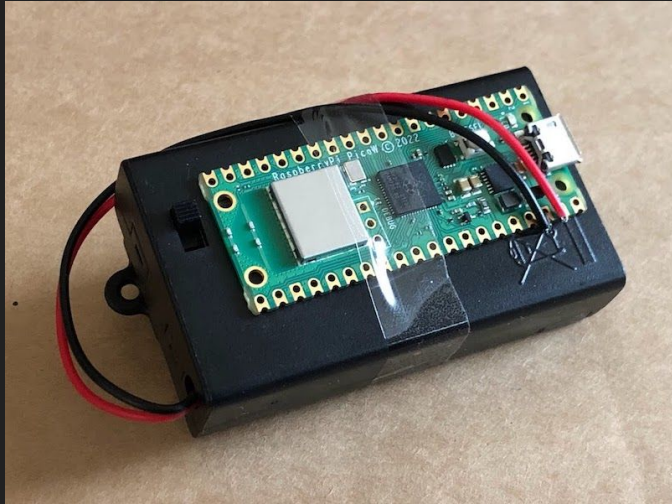
BRK .	EQU a b==c	LDZ a b [c8]	ADD a b+c
INC a b c+1	NEQ a b!=c	STZ a [c8]=b	SUB a b-c
POP a b	GTH a b>c	LDR a b [PC+c8]	MUL a b*c
NIP a c	LTH a b<c	STR a [PC+c8]=b	DIV a b/c
SWP a c b	JMP a b PC+=c	LDA a b [c16]	AND a b&c
ROT b c a	JCN a (b8)PC+=c	STA a [c16]=b	ORA a b c
DUP a b c c	JSR a b PC PC+=c	DEI a b [D+c8]	EOR a b^c
OVR a b c b	STH a b c	DEO a [D+c8]=b	SFT a b>>c8 <<c8h



PicoGopher

- relies on simple protocol(s)
- low power (possibly solar powered)
- small (portable/wearable)
- offline-first
- can be extended and used for different purposes
- Code: <https://github.com/aittalam/PicoGopher>
- Docs: <gopher://gopher.3564020356.org/>

PicoGopher



```
Not Secure | 192.168.4.1
```

```
gopher://192.168.4.1/
192.168.4.1
```

```

MMMML  MM      WMMW      AMMMMMMA
MMMMML MMMM  AMMMMMMA  WMMW      AMMMMMMA
MMMMM  W  MMMM  MMA  WMA  WMM  AMW  MMMM
MMMMMM  AWWW  MMMMMMMMM  AMM  WMMMMMMMMW
MMMMMM  WMMM  WWW  WMMMMMMW  WMM  AMW
WMMMMW      WV      VMWV      WMMV

+mala's gopherhole

==== Last updated: November, 5th 2022 ====

==== About ====
Joshua
+mala

==== Phlog ====
2022-10-15 - Repair
2022-10-08 - September
Archive

==== PicoGopher ====
2022-11-05 - PicoGopher - free bird
2022-10-29 - PicoGopher - sudo make a server
2022-10-23 - PicoGopher - Introduction
```

```

MMMML  MM      WMMW      AMMMMMMA
MMMMML MMMM  AMMMMMMA  WMMW      AMMMMMMA
MMMMM  W  MMMM  MMA  WMA  WMM  AMW  MMMM
MMMMMM  AWWW  MMMMMMMMM  AMM  WMMMMMMMMW
MMMMMM  WMMM  WWW  WMMMMMMW  WMM  AMW
WMMMMW      WV      VMWV      WMMV

+mala's gopherhole

==== Last updated: November, 5th 2022 ====

==== About ====
Joshua
+mala

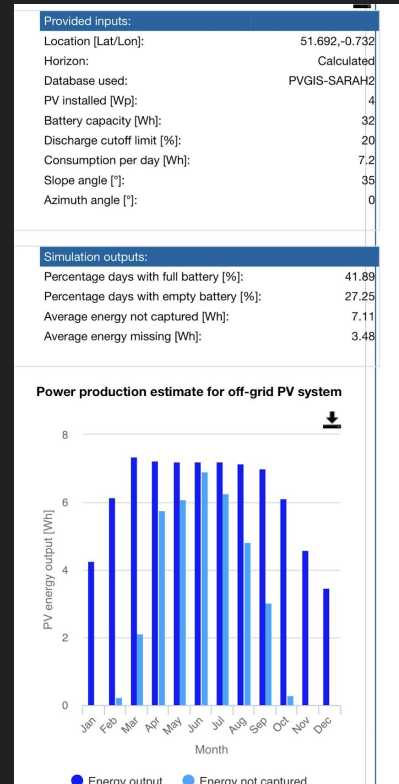
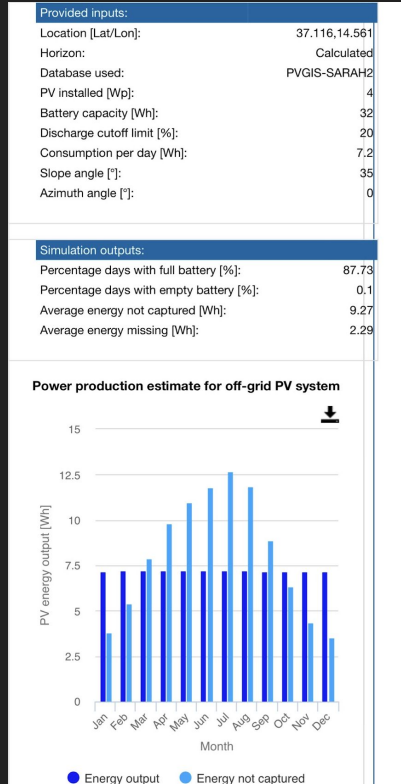
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```

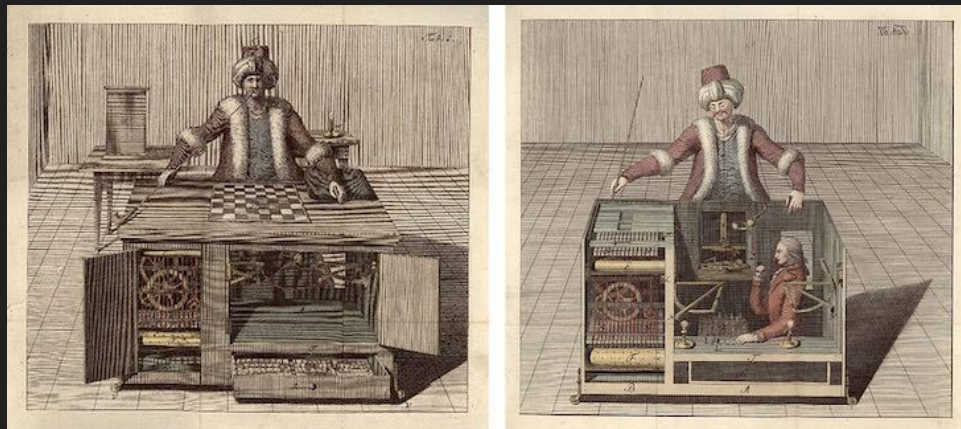
Here comes the sun



... aand here it goes away!

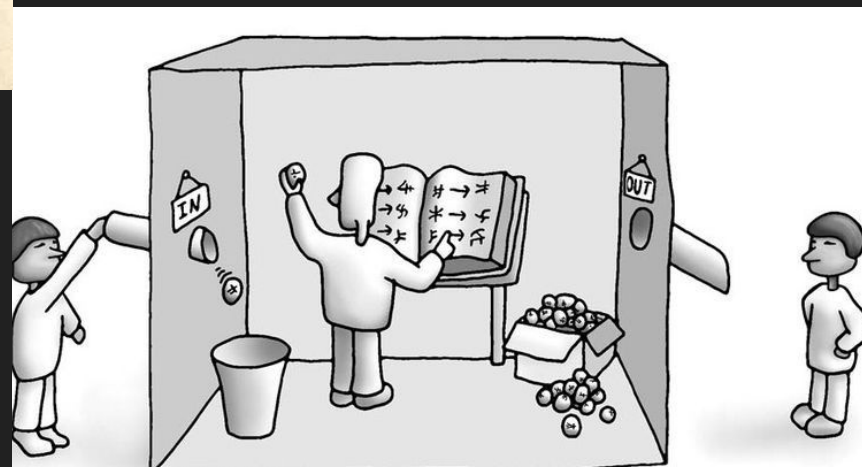


Smol AI (AI?)

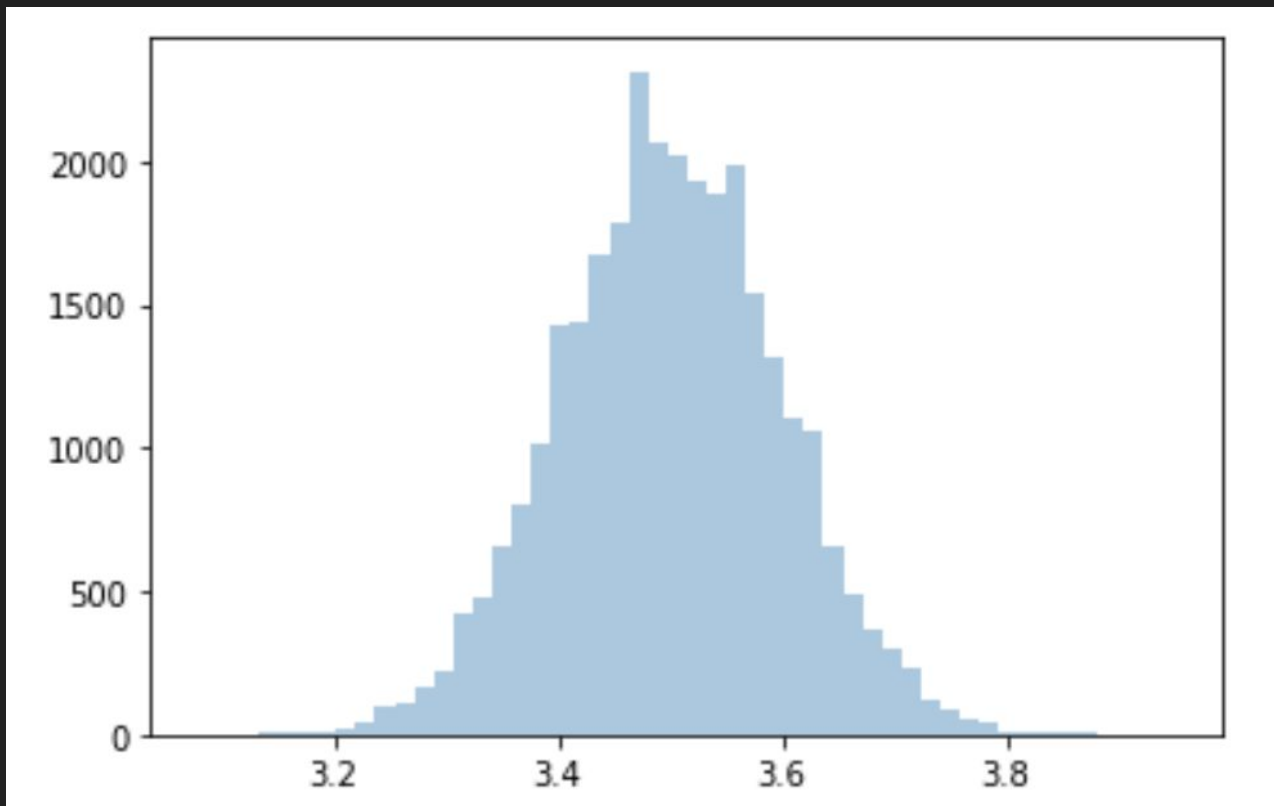


The Mechanical Turk

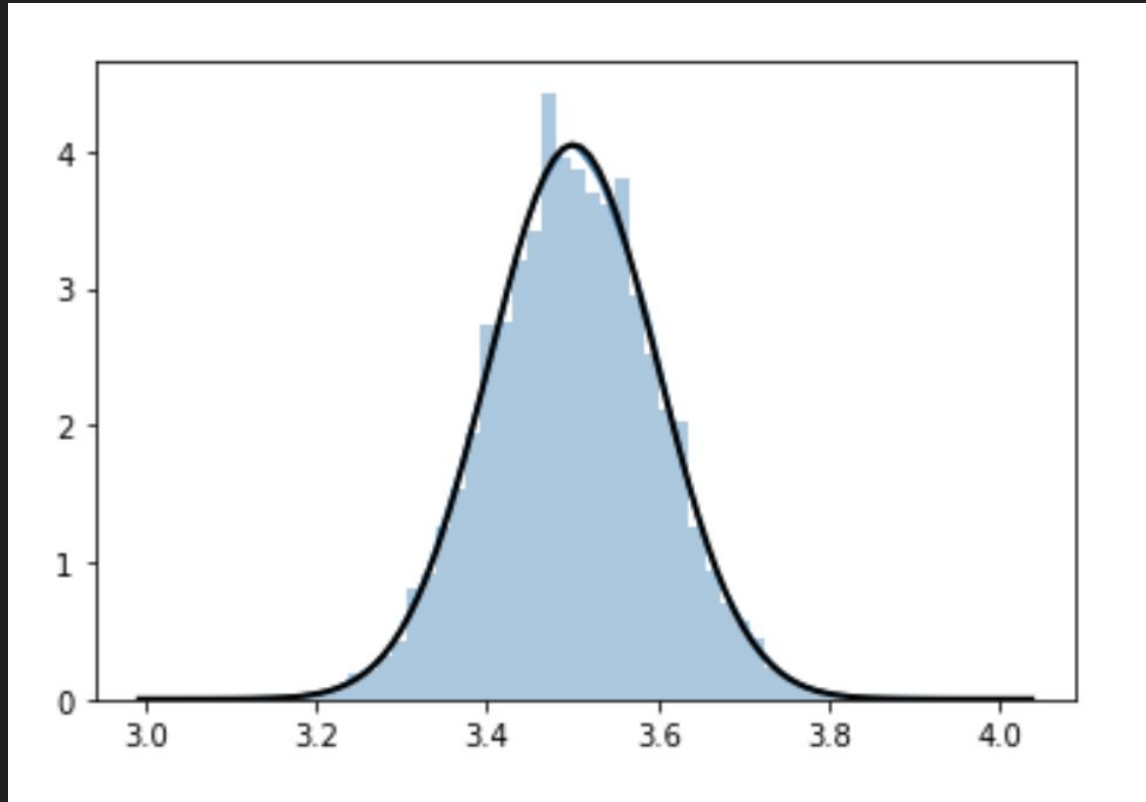
The chinese room (John Searle, 1980)



What distribution is this?

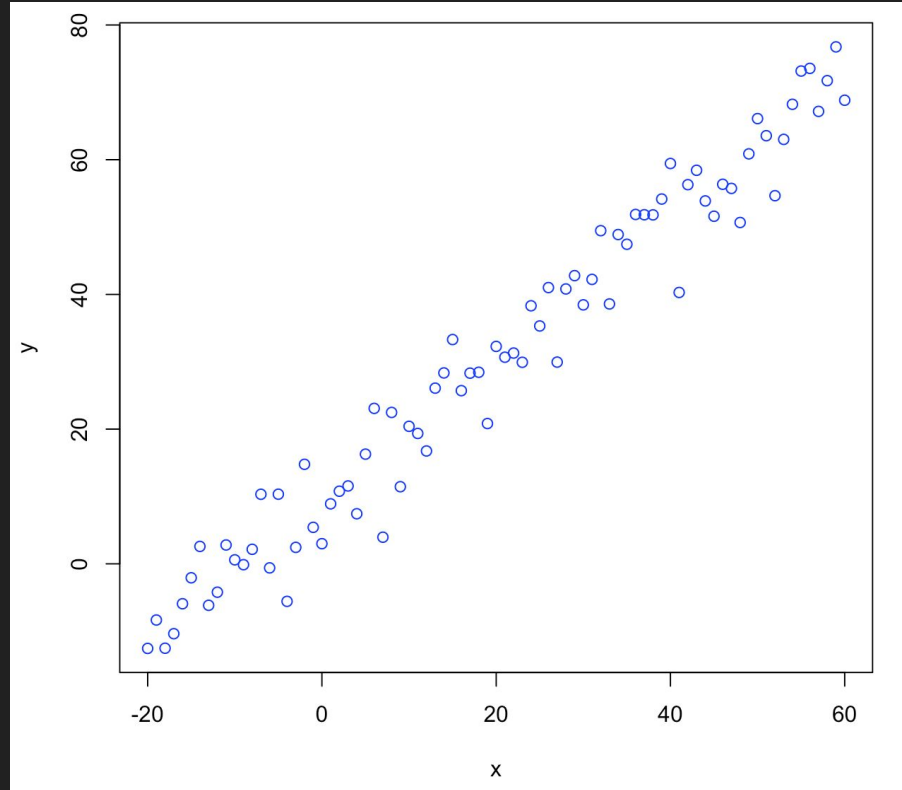


What distribution is this?

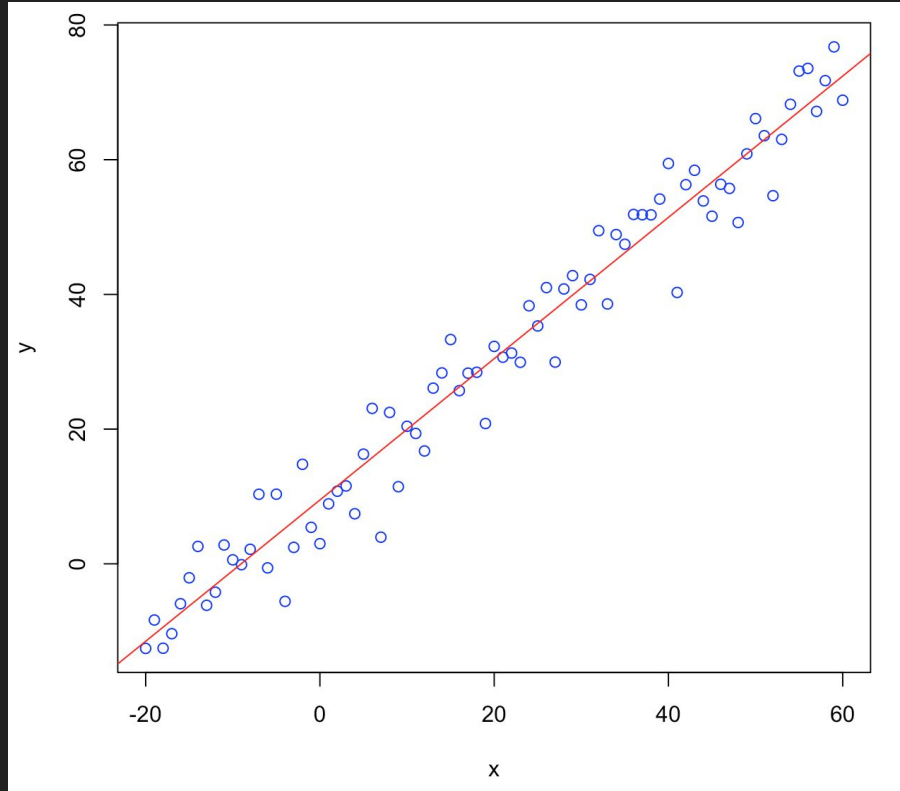


$$N(\mu, \sigma)$$

How would you describe these points?



How would you describe these points?



$$y = ax + b$$

ML as a function estimation problem



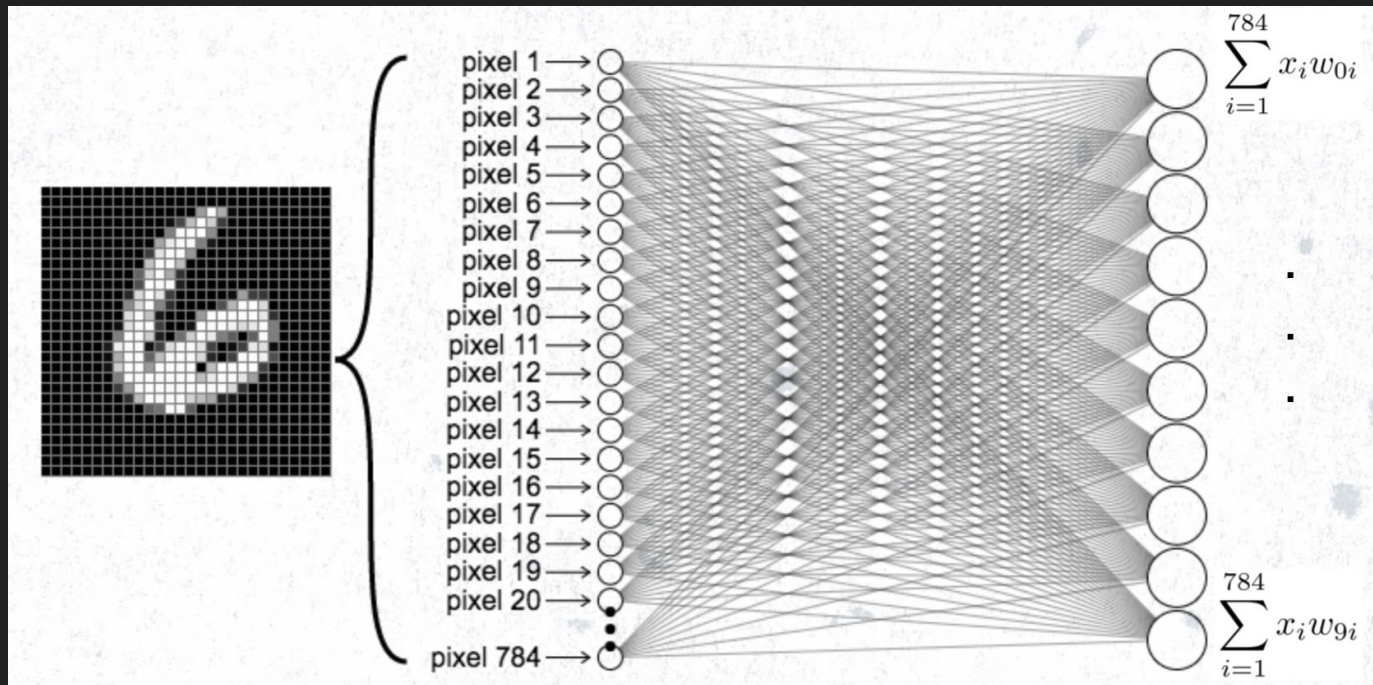
X

f(X)

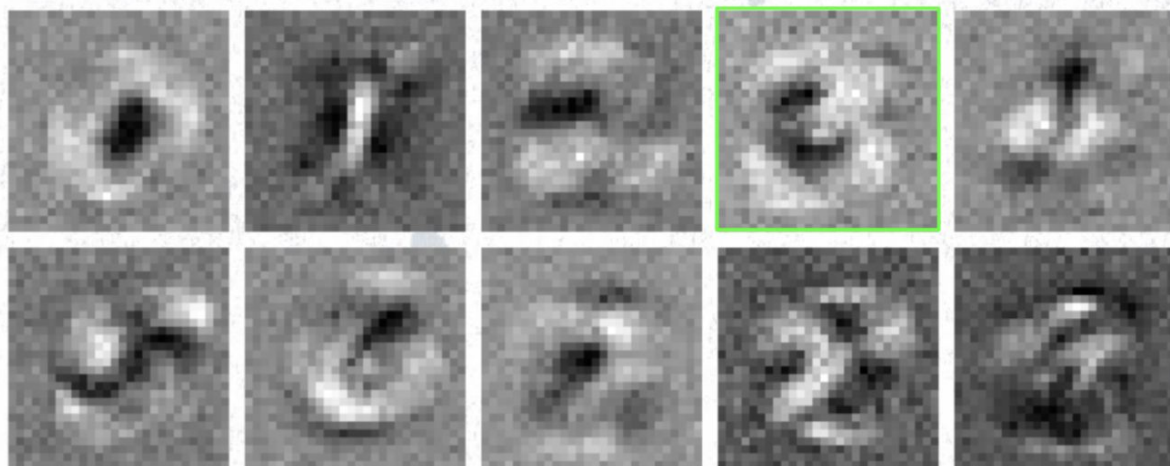
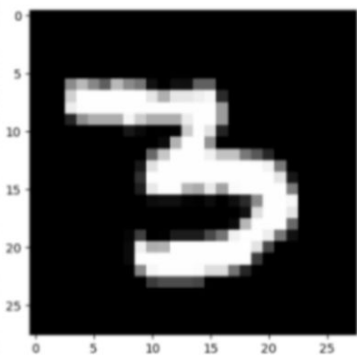
Chihuahua

Muffin

How does it work in practice?



Looking into the model



Twitter/[twhin-bert-large](#)

like 8

Fill-Mask PyTorch Transformers 89 languages arxiv:2209.07562 bert Twitter Multilingual AutoTrain Compatible License: apache-2.0

Model card Files and versions Community 1

Train Deploy Use in Transformers

Edit model card

Downloads last month 448



TwHIN-BERT: A Socially-Enriched Pre-trained Language Model for Multilingual Tweet Representations

PRs welcome

arXiv 2203.15827

This repo contains models, code and pointers to datasets from our paper: [TwHIN-BERT: A Socially-Enriched Pre-trained Language Model for Multilingual Tweet Representations](#).

[PDF] [HuggingFace Models]

Overview

TwHIN-BERT is a new multi-lingual Tweet language model that is trained on 7 billion Tweets from over 100 distinct languages. TwHIN-BERT differs from prior pre-trained language models as it is trained with not only text-based self-supervision (e.g., MLM), but also with a social objective based on the rich social engagements within a Twitter Heterogeneous Information Network (TwHIN).

Hosted inference API

Fill-Mask

Examples

Mask token: <mask>

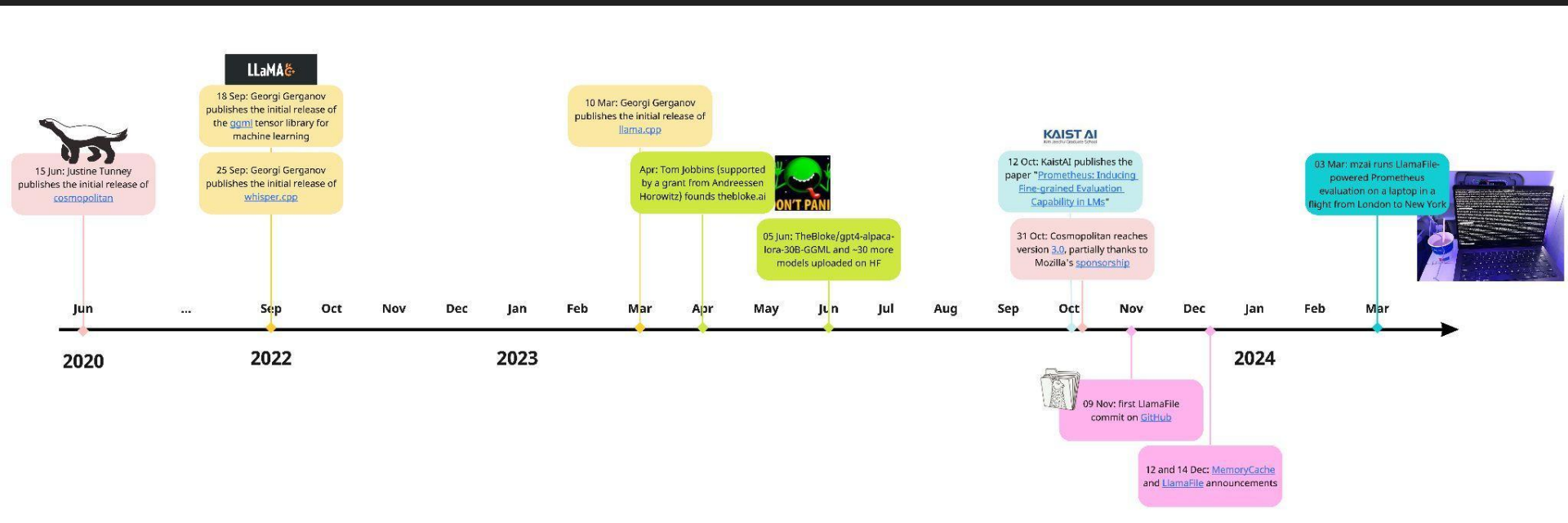
Elon Musk is a <mask>

Compute

Computation time on cpu: cached

fraud	0.107
pussy	0.050
racist	0.043
terrorist	0.034
menace	0.033

Llamafile



What it is

- Single-file executable LLM
- Quantized models run locally
- Optimizations to CPU inference: 30~500x faster
- Compatible with OpenAI's API (did anyone say [adversarial interoperability?](#))

How it works

- download a llamafile (e.g. from [github](#), [mozilla's HF](#), [justine's HF](#), [us](#))
- open the terminal and go to where the file has been saved
 - `cd ~/Downloads`
- make sure the file is executable
 - `chmod 755 <filename>`
- run the file:
 - `./<filename>`
- a browser window should be opened automatically

... check out [this video](#) too!

Llamafiler

- Embedding server for Llamafiler

```
llamafiler -m all-MiniLM-L6-v2.F16.gguf -l 0.0.0.0:8080
```

- Send text => Get embeddings

```
curl -X 'POST' \  
      'http://localhost:8080/embedding' \  
      -H 'accept: application/json' \  
      -H 'Content-Type: application/json' \  
      -d '{ "content": "Hello world" }'
```

- Describe / search / group / recommend [your own data!](#)

EVERY

THING



LOOKS LIKE A NAIL

Smol AI projects

- [Local alt text generation](#)
- [Clustering your ideas](#)
- [CamelCasing for hashtags](#) (an idea for a new project!)

... AI predates LLMs => plenty of [useful, cheaper applications!](#)

Conclusions

- content above everything
- communities *of practice*
- protocols, not platforms
- people in control
- resilient to change
- open, free

Thank you!