

Growing pains of an open source project

Engineering

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DjangoCon Europe 2022
September 23, 2022

Pradyun Gedam
Software Engineer, Python Infrastructure

TechAtBloomberg.com

Who am I?

@pradyunsg

Maintainer of pip, TOML, Furo, sphinx-themes.org, and more

Executable Books Project Member

Python Packaging Authority Member (PyPA)

Python Software Foundation Fellow (PSF)

Python Package Index Moderator (PyPI)

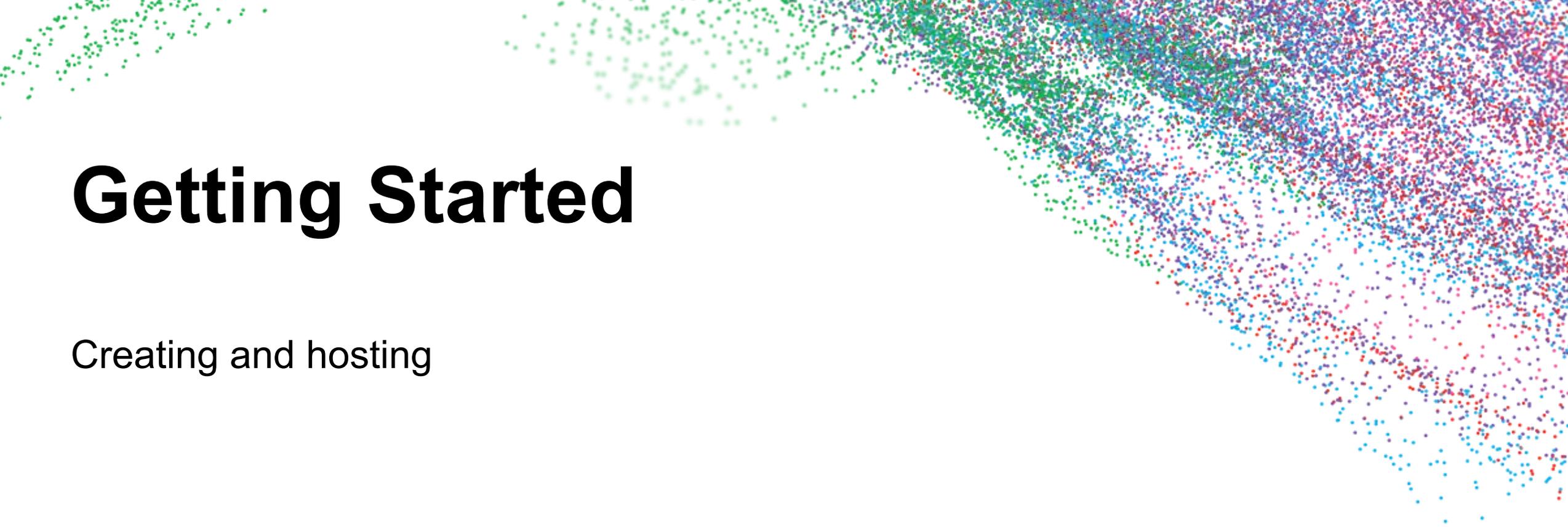
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Getting Started

Creating and hosting

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GitHub



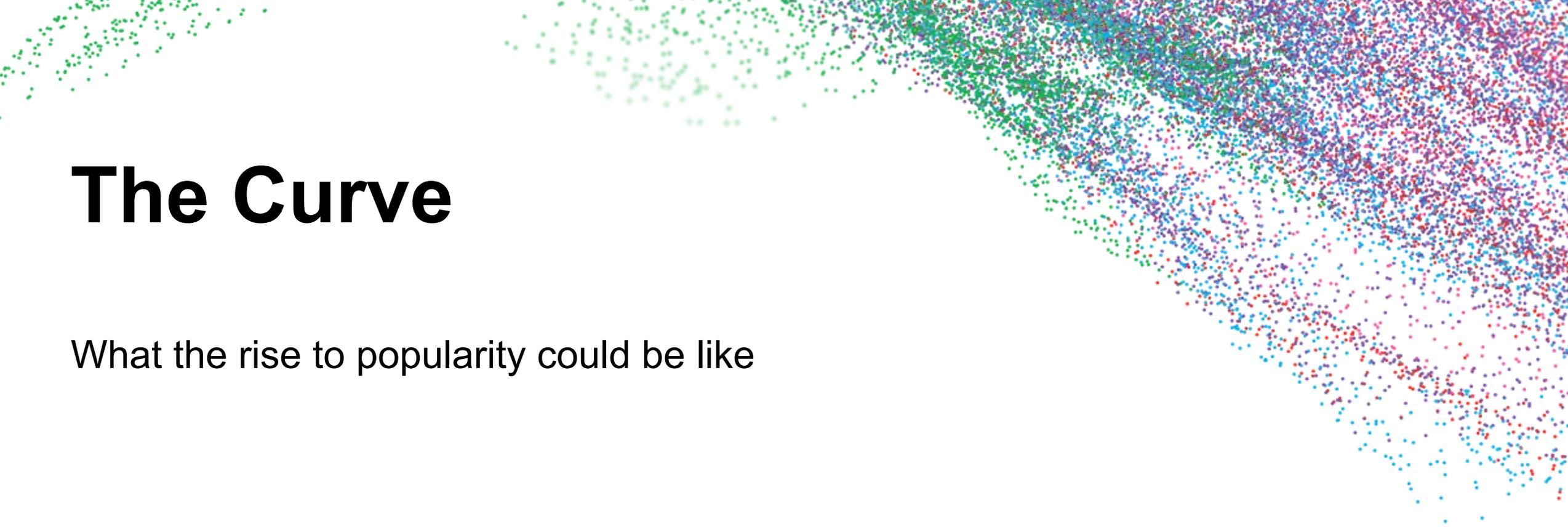
More popular = More users

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The Curve

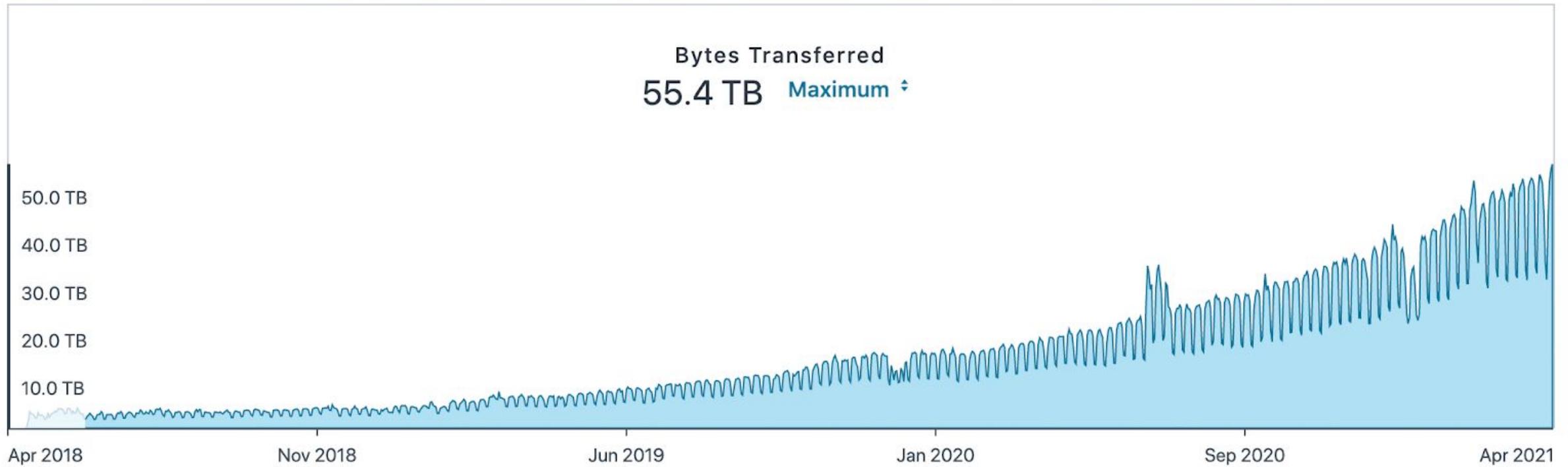
What the rise to popularity could be like

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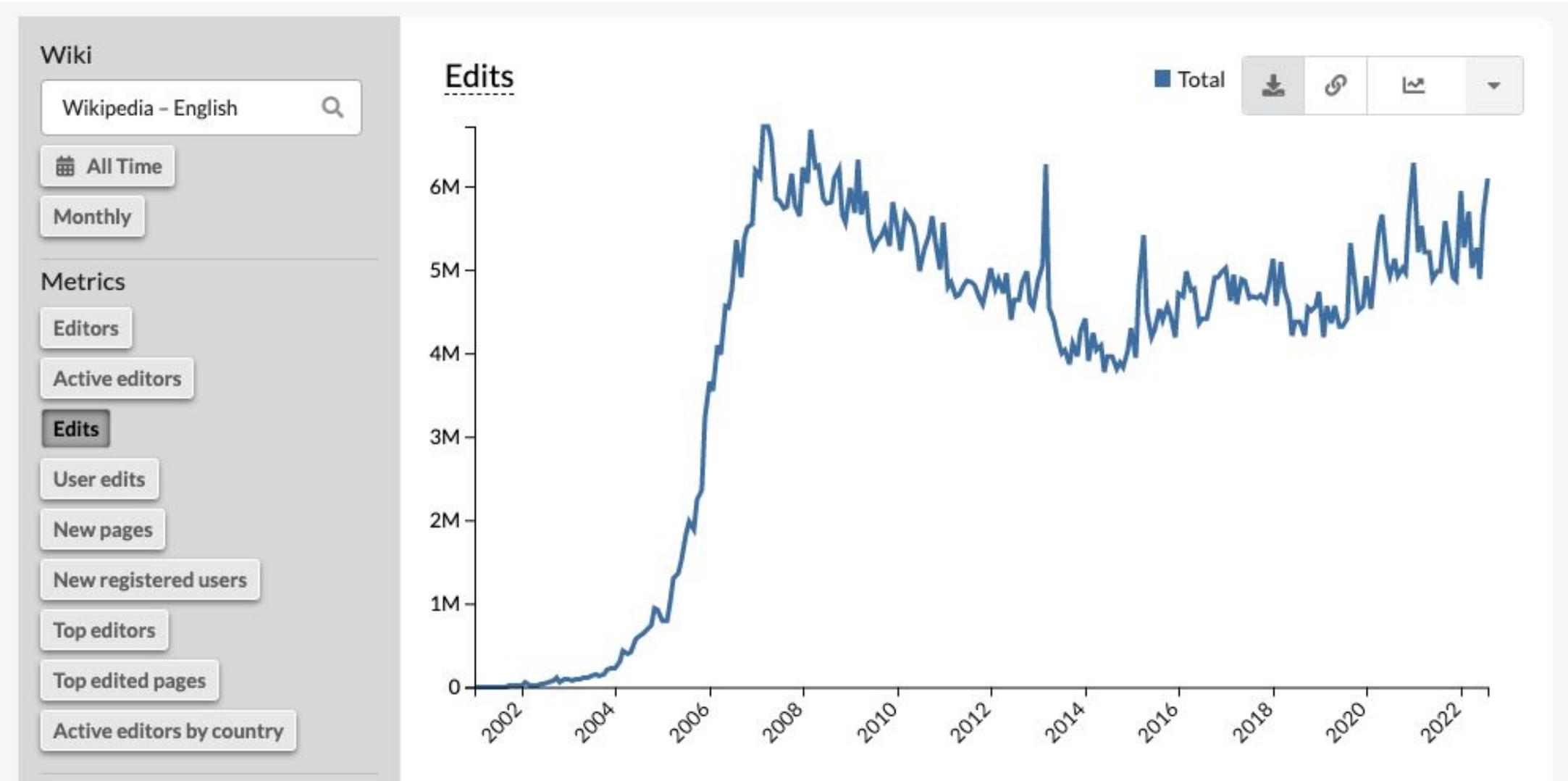
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<https://dustingram.com/articles/2021/04/14/powering-the-python-package-index-in-2021/>



<https://stats.wikimedia.org/#/en.wikipedia.org/contributing/edits/normal|line|2001-01-01~2022-10-01|~total|monthly>

● Ruby
Programming language

● Ruby on Rails
Software

+ Add comparison

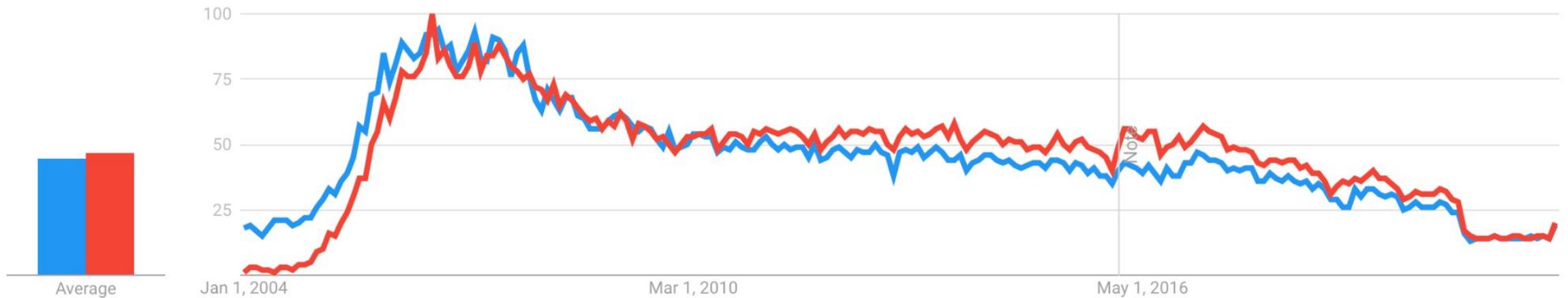
Worldwide ▼

1/1/04 - 1/1/22 ▼

All categories ▼

Web Search ▼

Interest over time ?



Average

<https://trends.google.com/trends/explore?date=2004-01-01%202022-01-01&q=%2Fm%2F06ff5,%2Fm%2F0505cl>



Issue Tracker

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pypa / pip

Public

<> Code



Issues

911



Pull requests

106



python / cpython

Public

<> Code



Issues

5k+



Pull requests

1.6k



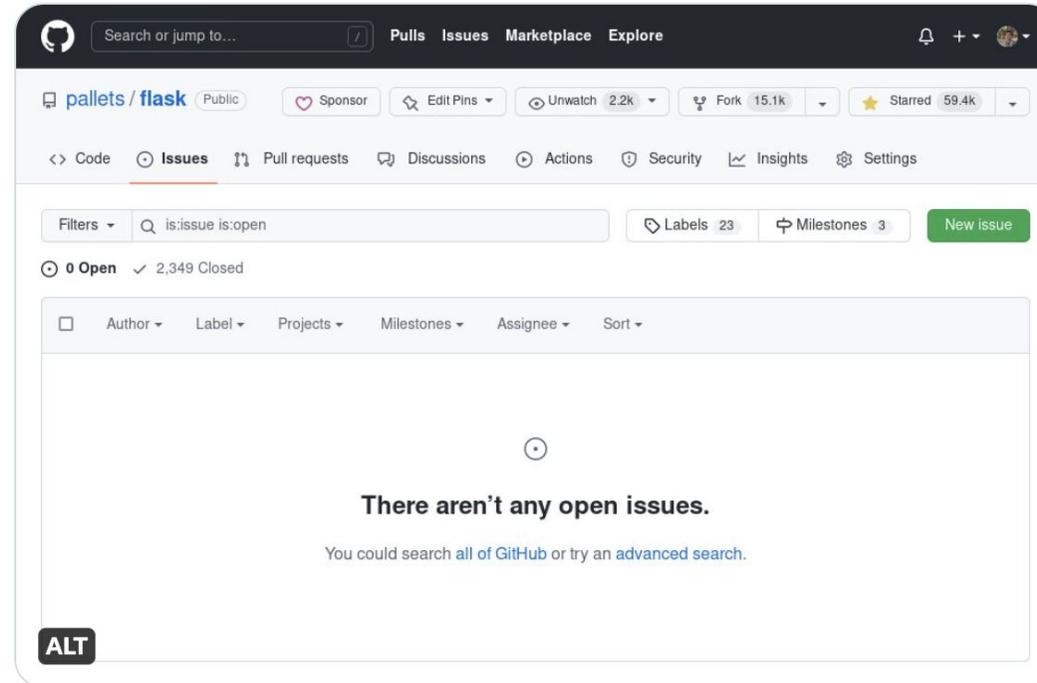


David Lord

@davidism



I've done it. I've achieved the open source maintainer platinum trophy. There are ✨ no open issues or pull requests on Flask ✨, a framework downloaded 75 million times in the last month.



8:41 pm · 1 Jul 2022 · Twitter Web App



593 Retweets 160 Quote Tweets 8,933 Likes

<https://twitter.com/davidism/status/1542956488355762176>



Documentation

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TUTORIALS

LEARNING-ORIENTED

Serve our study

UNDERSTANDING-ORIENTED

EXPLANATION

Practical steps

Theoretical knowledge

HOW-TO GUIDES

TASK-ORIENTED

Serve our work

INFORMATION-ORIENTED

REFERENCE



Communication channels

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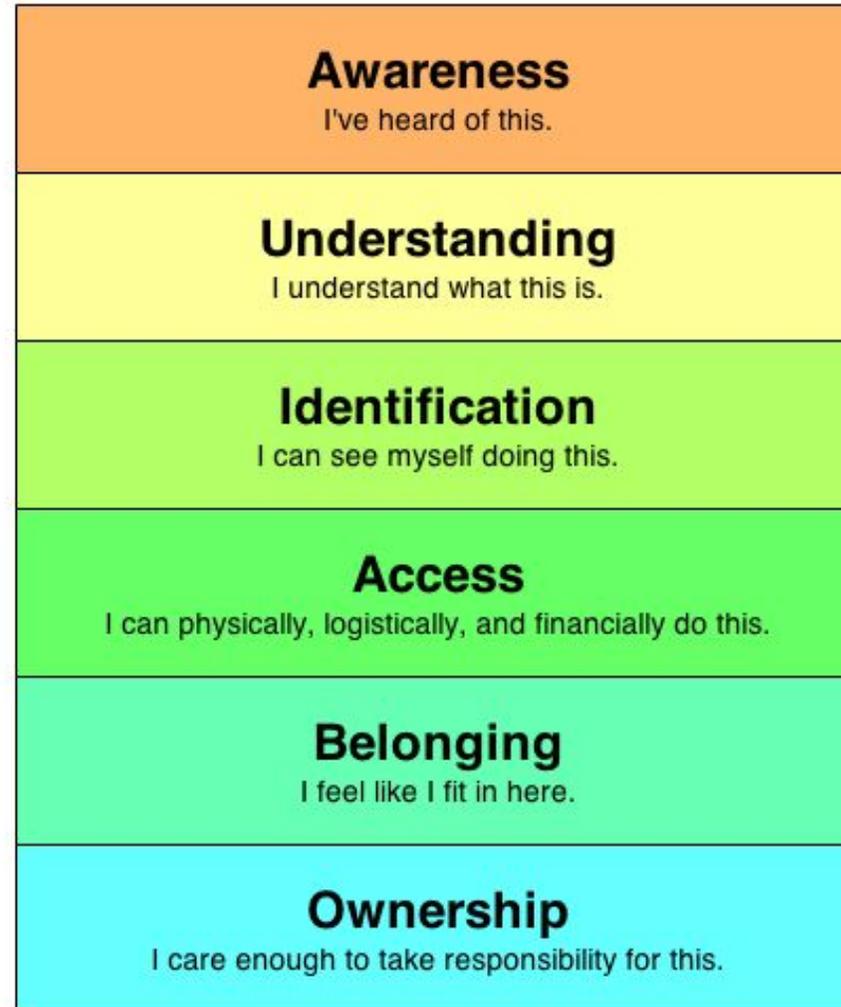
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Pathway to Inclusion

6 steps from "never heard of it" to "this is my thing"



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<https://harihareswara.net/posts/2022/the-pathway-to-inclusion-insight-from-alex-bayley/>



Community Management

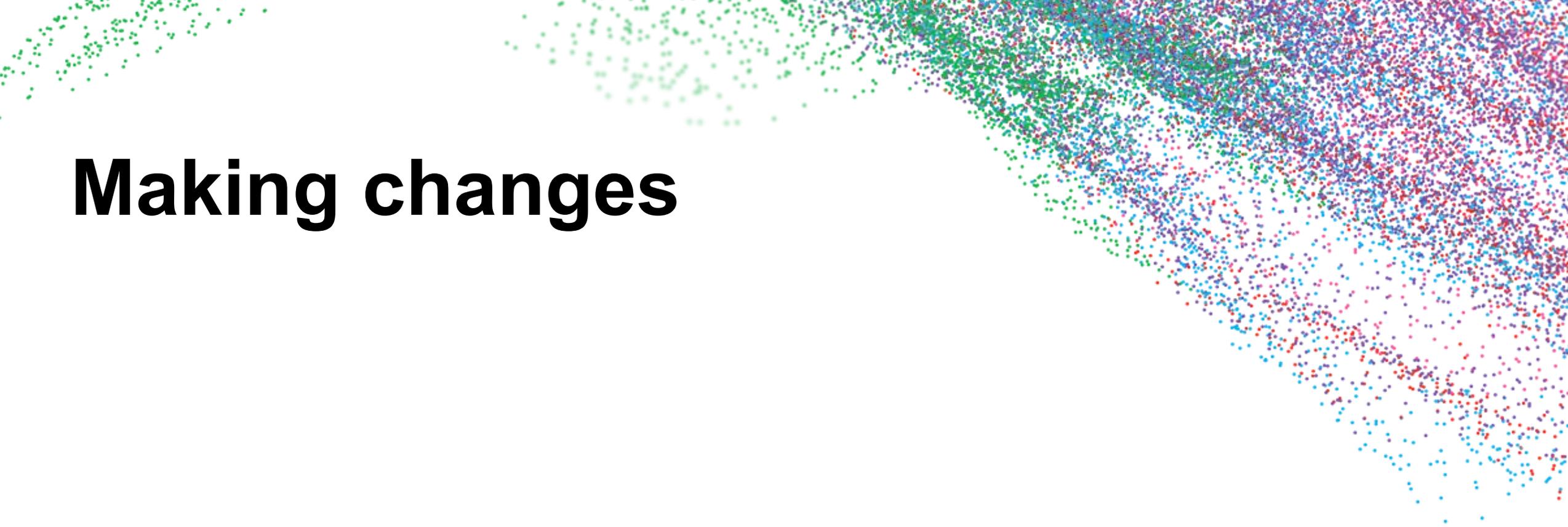
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Making changes

A decorative graphic in the top right corner of the slide, consisting of a dense, fan-shaped cluster of small, multi-colored dots (green, blue, red, purple) that tapers towards the top left.

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The Stable Interface Paradox

The smaller the user base, the harder it is to design an appropriate interface, but the larger the user base, the harder it is to change your interface.

LATEST: 10.17

UPDATE

CHANGES IN VERSION 10.17:
THE CPU NO LONGER OVERHEATS
WHEN YOU HOLD DOWN SPACEBAR.

COMMENTS:

LONGTIMEUSER4 WRITES:

THIS UPDATE BROKE MY WORKFLOW!
MY CONTROL KEY IS HARD TO REACH,
SO I HOLD SPACEBAR INSTEAD, AND I
CONFIGURED EMACS TO INTERPRET A
RAPID TEMPERATURE RISE AS "CONTROL".

ADMIN WRITES:

THAT'S HORRIFYING.

LONGTIMEUSER4 WRITES:

LOOK, MY SETUP WORKS FOR ME.
JUST ADD AN OPTION TO REENABLE
SPACEBAR HEATING.

EVERY CHANGE BREAKS SOMEONE'S WORKFLOW.

<https://xkcd.com/1172/>

Hyrum's Law

An observation on Software Engineering

Put succinctly, the observation is this:

With a sufficient number of users of an API,
it does not matter what you promise in the contract:
all observable behaviors of your system
will be depended on by somebody.



Limited Visibility

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Change management

Communication, Support, Expectations

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Embrace change

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Churn Budgets

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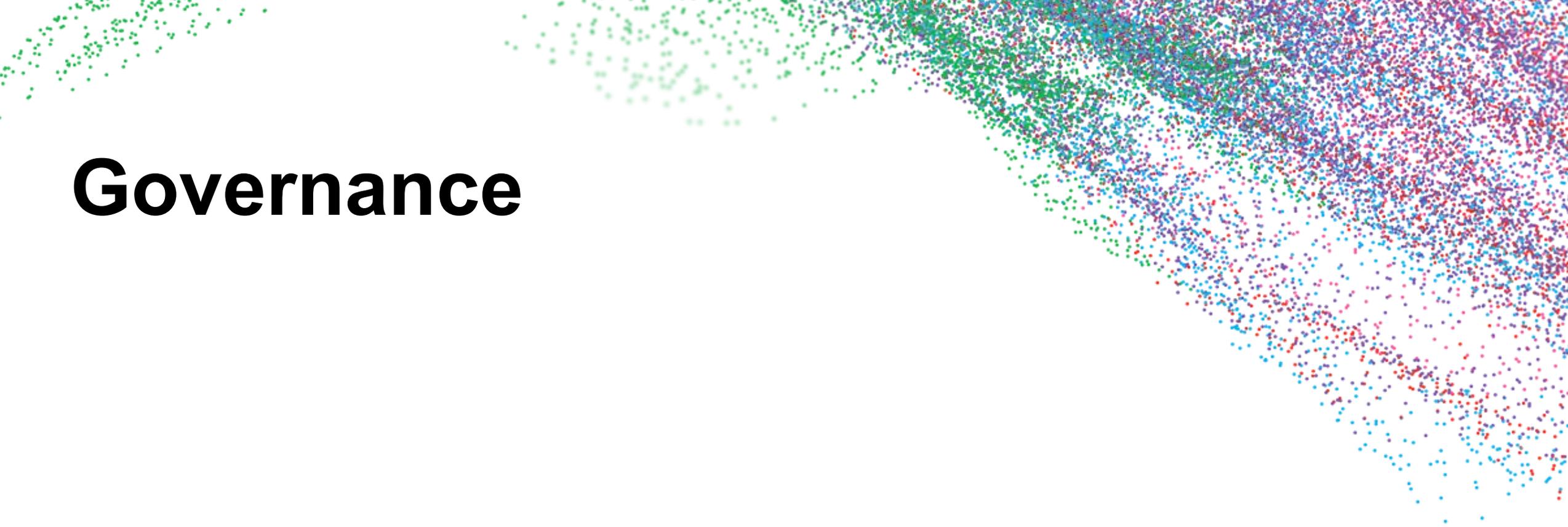
**Different users *will* want
different things**

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Governance

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There is lots of “invisible” work

Many things don't show up in the list of commits



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is available on all the major distribution channels such as Debian, Fedora, Arch Linux, conda-forge, Nixpkgs, Alpine Linux, FreeBSD/OpenBSD, Gentoo Linux, MacPorts, OpenEmbedded, Spack, etc.

<https://github.com/psf/black/pull/3233>





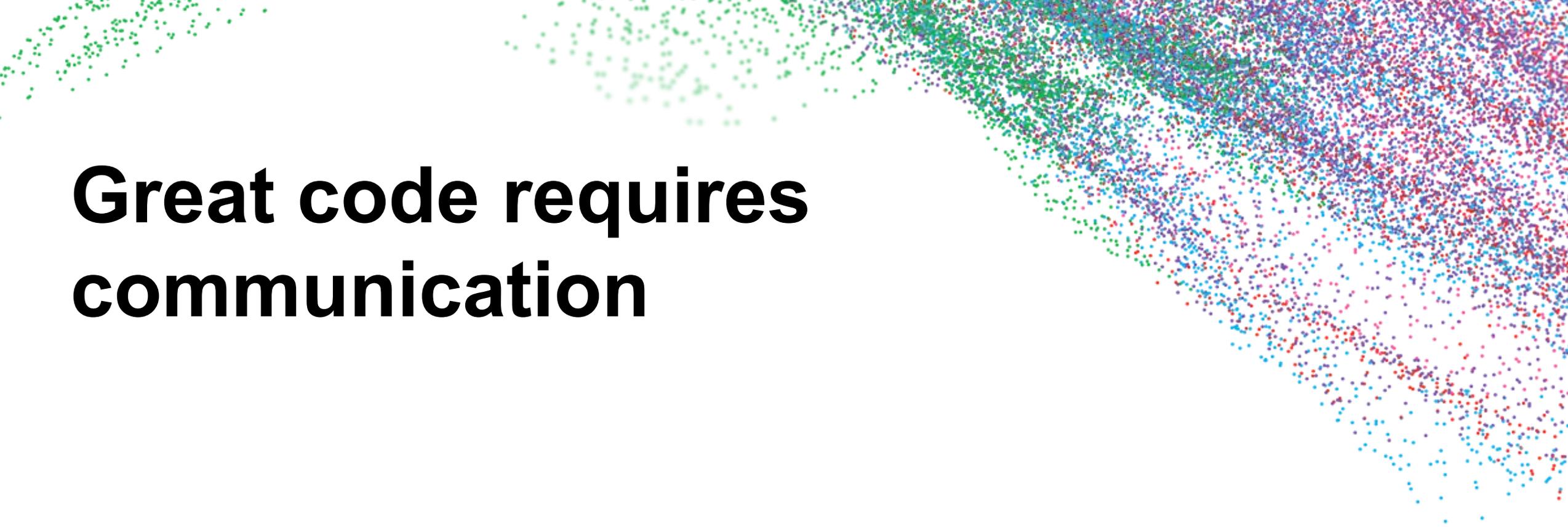
Sustainability

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Great code requires communication

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Thank you!

We are hiring: bloomberg.com/engineering

Learn more about Bloomberg's commitment as an "Open Source First" company: www.TechAtBloomberg.com/opensource

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Things that helped inform this talk

- Karl Fogel's excellent book, "Producing Open Source Software" <https://producingoss.com/>
- Fedora's changes policy: https://docs.fedoraproject.org/en-US/program_management/changes_policy/
- Python's Backwards compatibility policy: <https://peps.python.org/pep-0387/>
- <https://opensource.com/article/19/3/managing-changes-open-source-projects>
- <https://about.gitlab.com/handbook/product-development-flow/feature-flag-lifecycle/>
- <https://www.python.org/psf/conduct/>
- <https://pganssle-talks.github.io/pyconf-hyderabad-2020-stable-interface/>
- <https://harihareswara.net/posts/2022/the-pathway-to-inclusion-insight-from-alex-bayley/>
- <https://snarky.ca/the-social-contract-of-open-source/>
- <https://github.com/django/deps/blob/main/accepted/0010-new-governance.rst>