PGCONF EU 2026 · VALENCIA · THURSDAY, OCTOBER 22

Postgres Before PostgreSQL

Stories from inside the original Berkeley lab

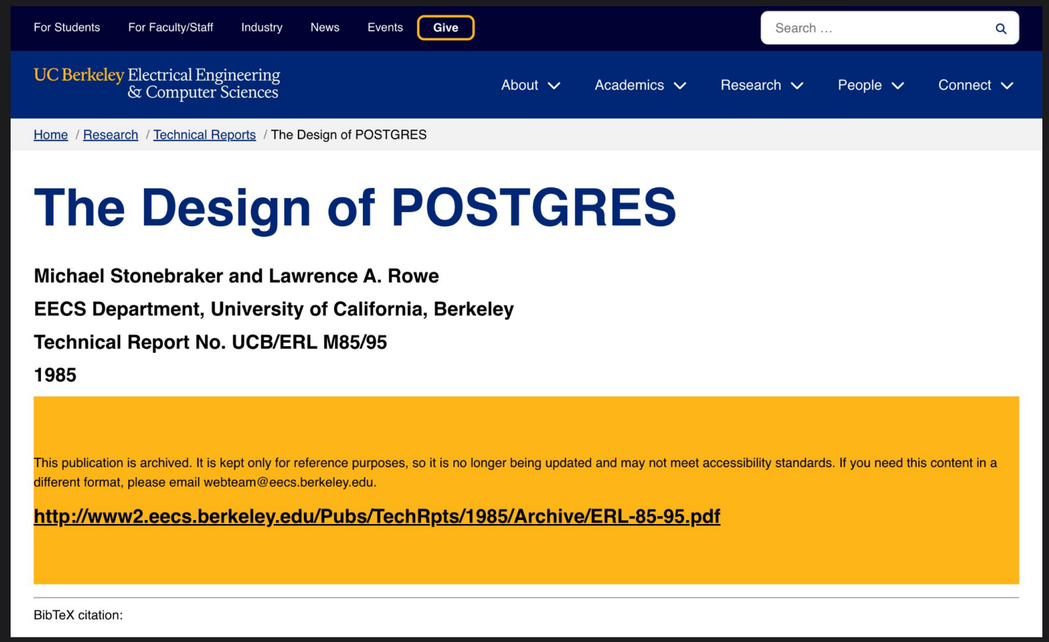
Ellyne Phneah



WHY NOW

PostgreSQL turns thirty this year

But the real Postgres project started 40 years ago.



Source

THE QUESTION

Why does PostgreSQL work like this?





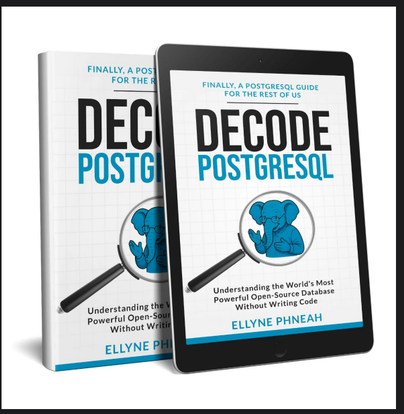
WHO AMI

Ellyne Phneah

A former journalist and community builder, storyteller, which is exactly why I asked these questions for you.

Content Marketing Manager at Lightbringer · former organizer of the Malmö PostgreSQL User Group · author of *Decode PostgreSQL*

Lightbringer



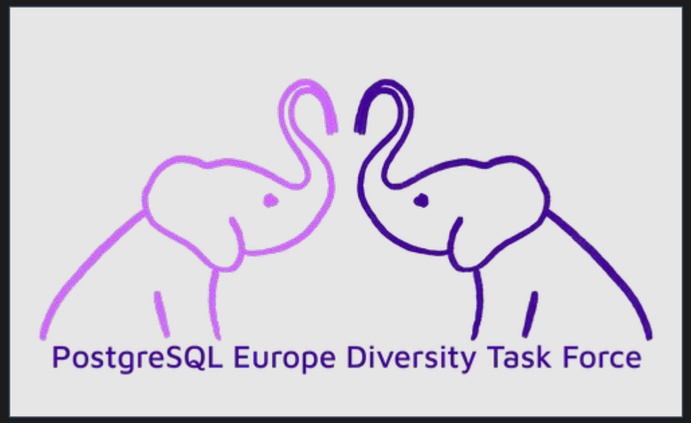
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THANK YOU

Greg Kemnitz. Curt Kolovson.

For the stories, and for trusting me to tell them.

dbtune



AND ALSO...

- The Diversity Committee for making my trip possible
- DBtune for the conversations that started this
- Curt Kolovson: Weighing the pros and cons of PostgreSQL

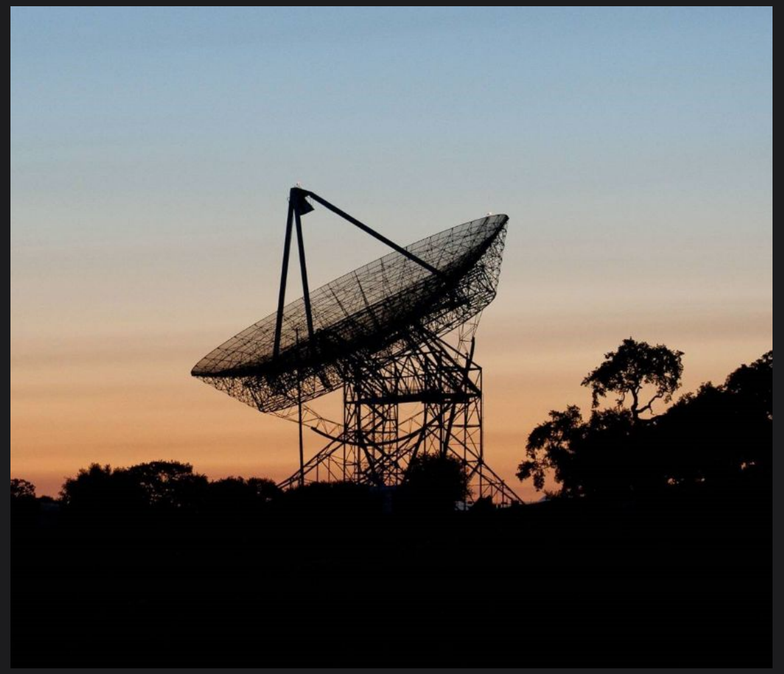
Read Curt's article on Medium



THE REUNION

Stanford Dish, January 2026

Two engineers went for a walk and talked to me twice on two Monday afternoons.



THE STAFF ENGINEER

Greg Kemnitz

The person who knew everything.

He held the whole codebase in his head. When something strange came up in a staff meeting, Stonebraker turned to Greg — and Greg was right about ninety percent of the time.



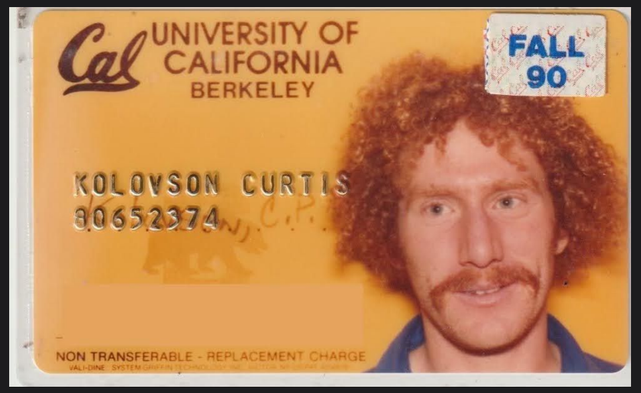
THE PHD STUDENT

Curt Kolovson

The person who built vacuum.

His thesis was on indexing historical data. He wrote the original vacuum, and forty years on, he still has strong opinions about what became of it.





RESEARCH SOFTWARE

“The priority was for the code to compile and sort of work.”

GREG KEMNITZ



FORTY YEARS

The whole story, in order

1970s	**Ingres adopts a turtle**	Slow, but it gets there
1985	**The design of POSTGRES**	Stonebraker and Rowe, tech report
1986	**Post-Ingres begins**	The name is a sequel title
1986	**Time travel by design**	Nothing is ever overwritten
Late 1980s	**Kolovson writes vacuum**	To migrate data onto optical drives
Late 1980s	**Extended relational becomes object-relational**	Same software, new name, funding secured
c. 1990	**Delispifying**	A year spent pulling Lisp back out
Early 1990s	**The bloodletting**	220,000 lines down to 170,000
1994	**University Postgres, BSD licence**	The turtle makes it onto a t-shirt
1995	**Andrew Yu and Jolly Chen add SQL**	Postgres95, the one human thread
1996	**PostgreSQL goes open source**	No handoff, nothing written down
Late 1990s	**Fujitsu rewrites the source**	A quiet, unsung corporate hero
2026	**Thirty years of the community**	Forty years of the software

Berkeley years Open source era

THE BLOODLETTING

The cleanup

220,000
lines of student code

170,000
lines after triage

30%
redundant or broken

It got more stable by getting smaller.

computer lab 1980s

THE GOLDEN AGE

One building, Berkeley, the 1980s

BSD Unix

TCP/IP

vi

RAID

Ingres

Postgres

A land-grant, build-things culture, and a professor who had already open-sourced a database once before.





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THE PIVOT

“Extended Relational is now Object-Relational.”

MICHAEL STONEBRAKER— AS RECALLED BY GREG KEMNITZ

Wisconsin was winning the object-oriented grants. Same software. New name.



THE HOT LANGUAGE

1986. Lisp is the future.

The query optimizer and the rule system were written in it. It made Postgres look like an AI project, and it helped get the funding.



DELISPIFYING

The storage engine had to be in C

LISP

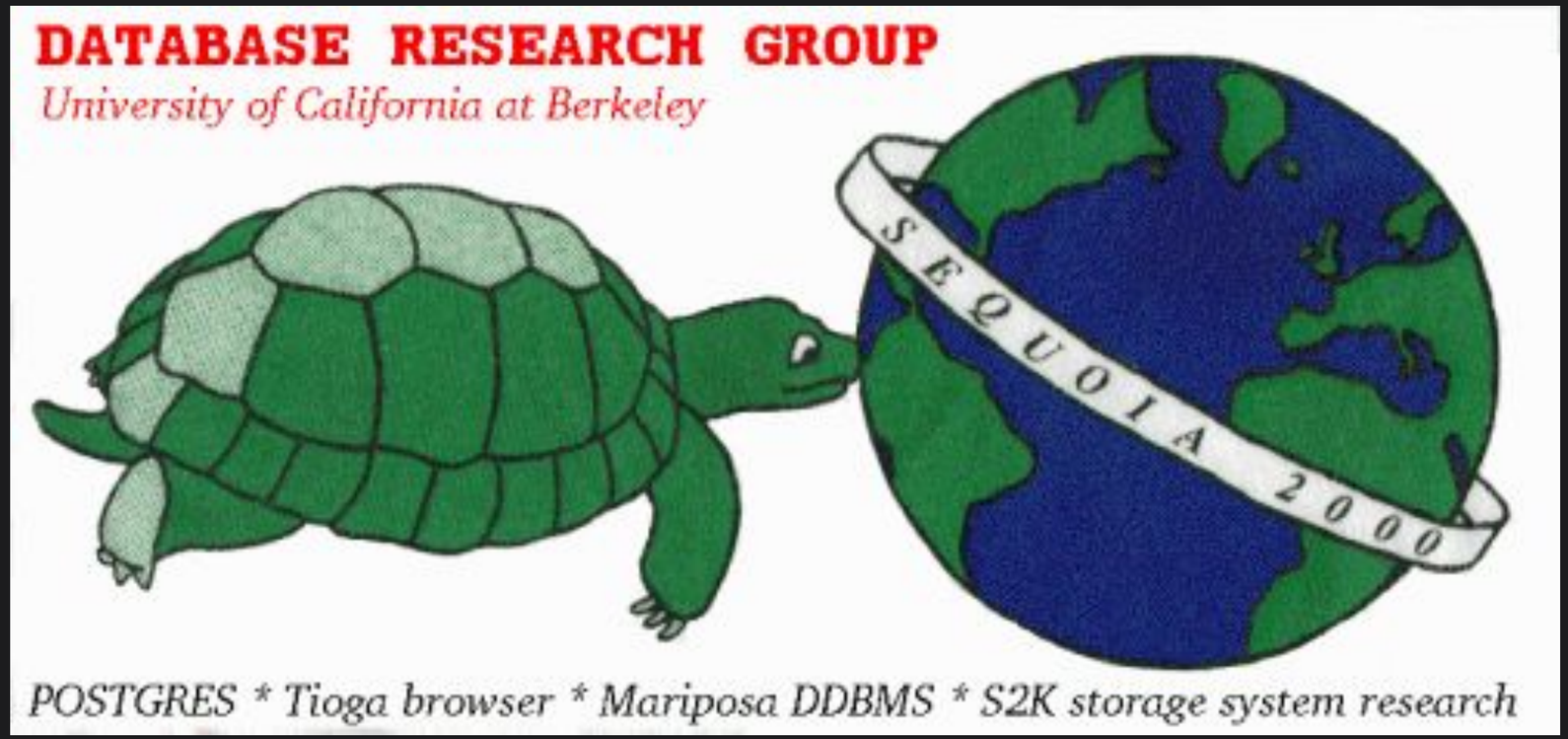
Optimizer, rules

bugs

C

Storage engine

Nearly a year went into pulling Lisp back out — a translator that didn't work, then thousands of lines by hand.


DATABASE RESEARCH GROUP
University of California at Berkeley
SEQUOIA 2000
POSTGRES * Tioga browser * Mariposa DDBMS * S2K storage system research

1986 HARDWARE

One disk, five people

500

megabytes

400

pounds

5

people to carry it

Every design decision in early Postgres was made around this machine.



THE SECOND QUESTION

What does vacuum actually clean?



TIME TRAVEL

You should be able to query last Tuesday.

Nothing was ever deleted. Which meant the disk always filled up.



WORM

Write once, read many

Vacuum's job was to migrate data onto optical drives. No-overwrite storage was economics, not philosophy — transaction logs were expensive in 1986.

Curt never imagined it becoming a garbage collector for MVCC. That came later, after he had left.



FORTY YEARS LATER

“The MVCC implementation still needs work.”

CURT KOLOVSON

“First generation.”

GREG KEMNITZ

Curt believes that the implementation of MVCC will eventually be improved and VACUUM will no longer be needed.

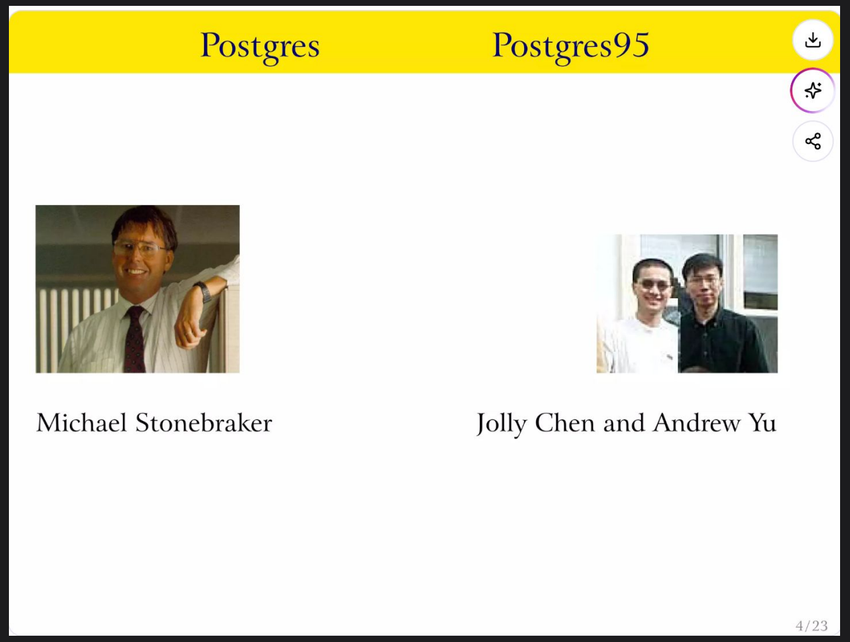
THE HANDOFF

1996

Postgres passed to developers outside Berkeley.

No meeting. No documentation of intent. Nothing written down.

The project transitioned. The institutional knowledge stayed behind in Berkeley.



Source

THE ONE THREAD

Andrew Yu

Postgres, Berkeley — Postgres95 — PostgreSQL

A Berkeley grad student who added SQL, alongside Jolly Chen.
Without him, there is no clean line between the two worlds.

THE UNSUNG HERO

Fujitsu

> *“A quiet, weirdly unsung corporate hero.”*

A massive cleanup and rewrite of the source, before the open-source community ever touched it.

THIRTY OR FORTY

“The 1996 start date is fine for the open-source organisation. But it's reinventing history.”

CURT KOLOVSON



WHAT THIS MEANS FOR YOU

These weren't perfect decisions. They were human ones.

Which means you are allowed to ask why — especially if you are new here.



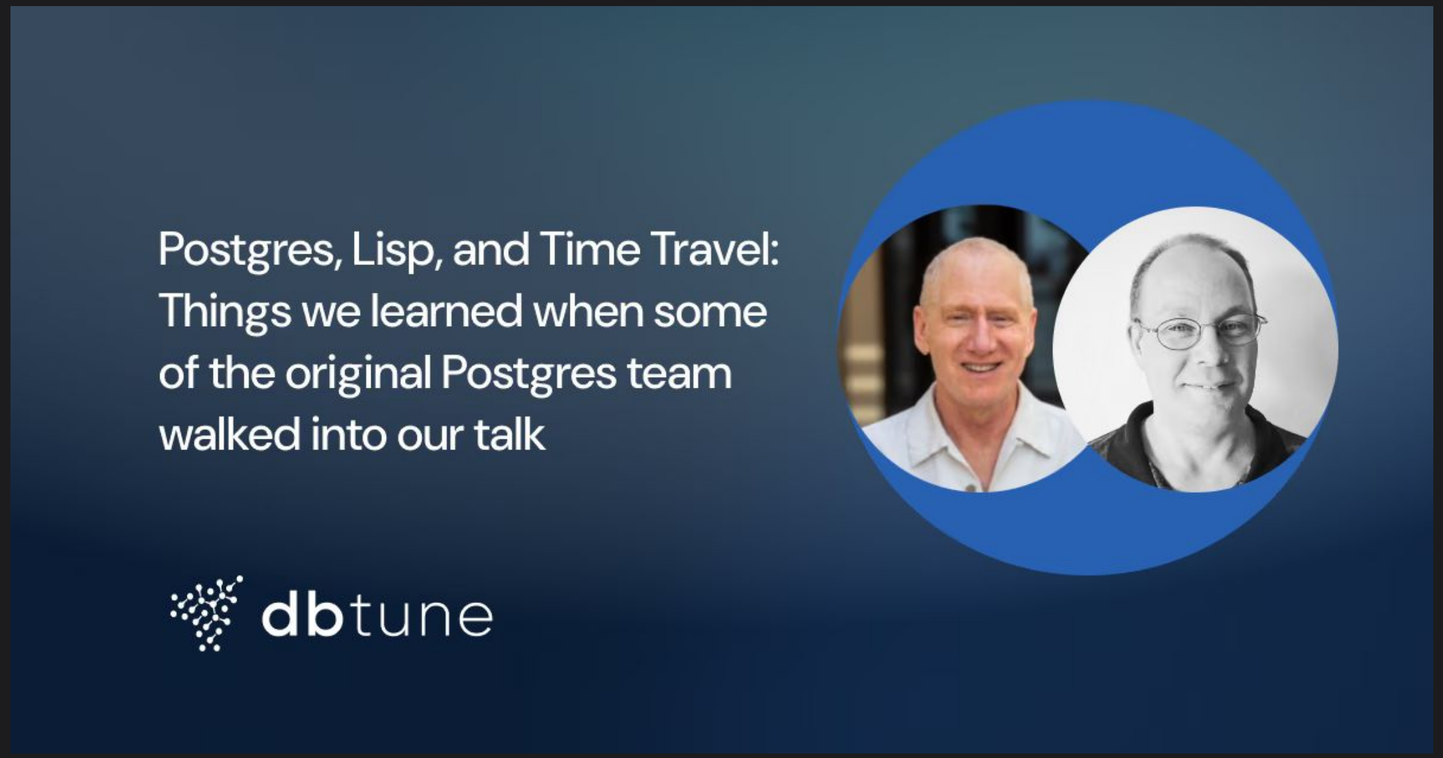
MUTUAL RESPECT

“The current community should remember: the project did not start from nothing.”

CURT KOLOVSON



THANK YOU



Read the blog

OVER TO YOU

Q&A

ellyne.phneah@gmail.com

LinkedIn

Decode PostgreSQL