Engineer Data

Performance Tuning

14 achievements

Connect the parts of your system

The work collected under “Performance Tuning” shows one part of a working system. We can help connect that part to the rest of your operation. Finding the queries and the missing indexes behind a system that has got heavier every year, and fixing the ones that matter.

Explore our services Get in touch →

Find a comparable challenge

Follow an example that resembles your situation. Its review describes the decisions behind the result, beyond the technology label. 30 days of electricity data in 180 ms — 180 ms to aggregate a month of meter readings

30 days of electricity data in 180 ms Get in touch →

30 days of electricity data in 180 ms

Engineered hourly electricity-consumption aggregation variants in Python, SQL and Bash + Jq, with the Python benchmark processing one 30-day JSONL dataset in 180ms.

Made a geographical data pipeline 50x faster

Recorded a 50x geographical data-pipeline improvement in the founder’s Utiligize work through SQL and data-model changes across PostgreSQL, MS SQL and Google Cloud BigQuery.

Improved GIS map performance 10x on PostgreSQL

Improved geographical map application performance by 10x through strategic database transition from MSSQL to PostgreSQL, including the data cutover, optimizing processing and data security.

Resolved 1,000 issues in geographical data

Resolved 1,000 issues in geographical data and time-series data, using GDAL, ArcGIS, PostGIS, Mapbox, QGIS, SQL (PL/pgSQL, Transact-SQL), Bash, ensuring high-quality big data processing.

Ran 100 PostgreSQL, MS SQL, BigQuery warehouses

Architected, created, and managed 100 PostgreSQL, MS SQL, and Google BigQuery data warehouse databases with primarily GIS and time-series data, optimizing performance and scalability.

Ran 10 PostgreSQL and MS SQL servers on Ubuntu

Designed, deployed, and maintained 10 PostgreSQL and MS SQL servers on Ubuntu Linux VPS, ensuring optimal server performance and reliability.

Accelerated PostgreSQL performance by 10x

Accelerated PostgreSQL performance by 10x via strategic indexing, partitioning, and query optimization, enhancing database efficiency for user, tenant, geospatial, and time-series electrical data.

Engineered 600 PL/pgSQL ETL/ELT pipelines

Engineered 600 PL/pgSQL-based ETL/ELT pipelines to streamline complex data processing workflows across multiple PostgreSQL development and production environments.

Designed a JSON passthrough from Postgres to API

Designed a JSON passthrough architecture where PostgreSQL functions return complete JSON forwarded verbatim by the Go API, eliminating intermediate unmarshalling and decoupling the frontend from schema changes.

Time-ordered keys for a growing data model

Adopted UUID v7 time-ordered identifiers (PostgreSQL 18) as entity keys to reduce B-tree index fragmentation and speed up queries.

Modeled 348 tables across 34 Postgres schemas

Modeled the maritime domain into 348 normalized tables across 34 PostgreSQL schemas — professionals, companies, ships, jobs, reviews and the rest — with SMALLINT lookups and UUID v7 keys.

Moved slow work onto a River job queue

Moved slow work off the request path onto a River job queue — 15 worker modules, 8 scheduled tasks and 20 pg_cron jobs — so a request returns while the work behind it carries on.

Built first-party analytics inside PostgreSQL

Built first-party product analytics in PostgreSQL — 47 functions over partitioned event tables that prune themselves — pseudonymised behind a rotating salt and gated on the visitor's consent.

Built a loyalty wallet, leagues and badges

Built the loyalty and reputation system — 67 functions over a 31-table ledger, with leagues, badges and a redemption shop — taking a row lock on the balance to close the double-spend window.

Focus the engineering effort

Bring a representative dataset, the questions it must answer and the current bottleneck. We can agree how to measure quality, throughput and recovery.

See what it costs Get in touch →

Put the subject in your context

Tell us how “Performance Tuning” appears in your own system. We can help choose the relevant service and define the work around it.

Explore our services

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