

German enterprise analytics platform

Domain: Restaurant & operations (EU) **Stack:** Python · Spring Boot · Angular · eCharts **Since:** 2024 production dashboards

Three-layer data platform: Python ingests messy sources, Spring serves governed APIs, Angular + eCharts gives operators drill-down — not one-off BI exports.

Python ETLSpring BootAngularPostgreSQLCharts
Pipeline

Ingest → stage → serve

POS and finance exports land in staging via nightly Python jobs. Spring exposes versioned REST aggregates. Chart configs stored as data — new metrics without template rewrites.

Why three stacks

Layer separation

Layer	Role	Separate because
Python	Ingest, cleanse, heavy SQL	Fast iteration on source file chaos
Spring	Auth, APIs, business rules	Typed contracts; cacheable aggregates
Angular	Operator UI	Reusable eCharts across business units
Scale & reliability		

Tactics

- Idempotent batches keyed by `source_batch_id`
- Materialized summaries for sub-second dashboard loads
- Feature flags on new metrics — regional opt-in before default

Production outcomes

Results

- Operations teams use dashboards daily — not slide-ware
- Governed API layer replaced ad-hoc spreadsheet exports
- Pipeline extensions ship without front-end rewrites

German buyer programme. Client identity available under NDA.