

# System Design & Production Debugging Cheatsheet

## **API Slow**

Check DB, GC, threads, network, downstream.

## **Kafka Lag**

Check partitions, concurrency, downstream.

## **DB Exhaustion**

Connection leaks, long transactions.

## **500 Errors**

Logs, traces, stack traces.

## **Memory Leak**

Heap dump, MAT, ThreadLocal.

## **Gateway**

Headers, auth, routing, TLS.

## **Resilience**

Timeout -> Bulkhead -> Retry -> Circuit Breaker -> Fallback.