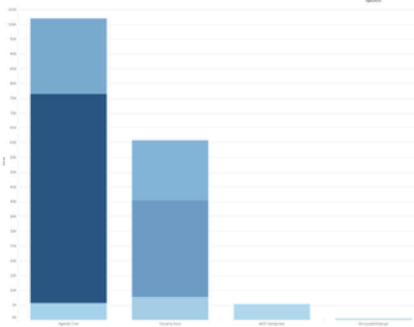


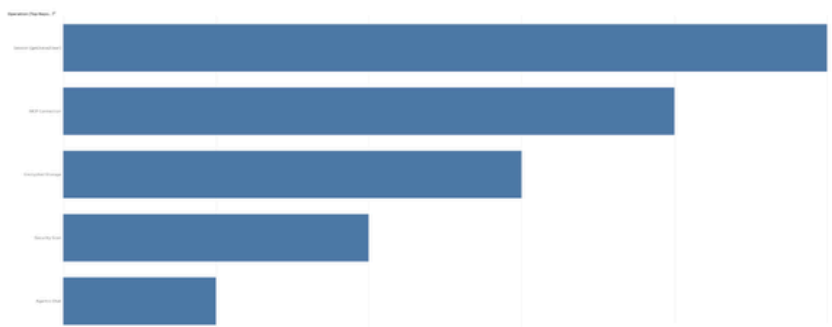
# Cortex: Performance & Memory Upgrade

## White Paper

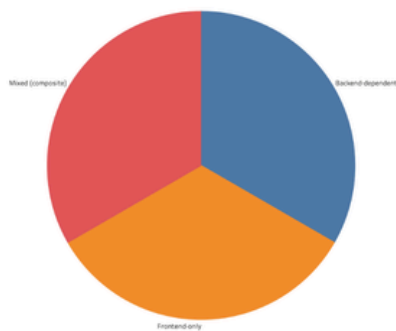
AVG Ms by Operation



Top Repo Hotspots by Operation

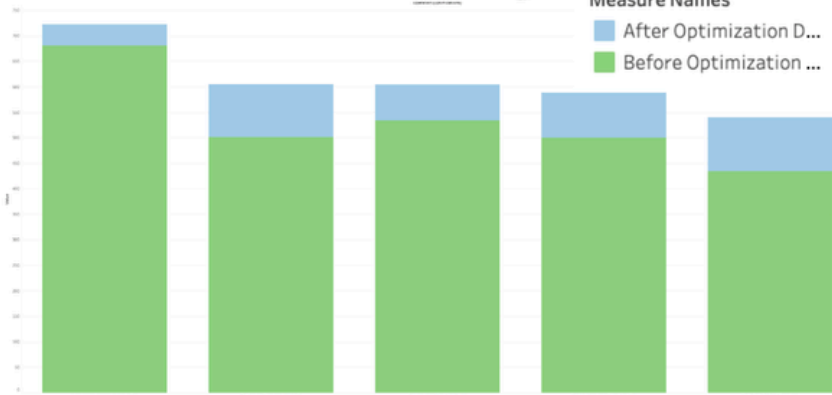


Frontend vs Backend. Total Ms



Measure Names

After Optimization D...  
Before Optimization ...



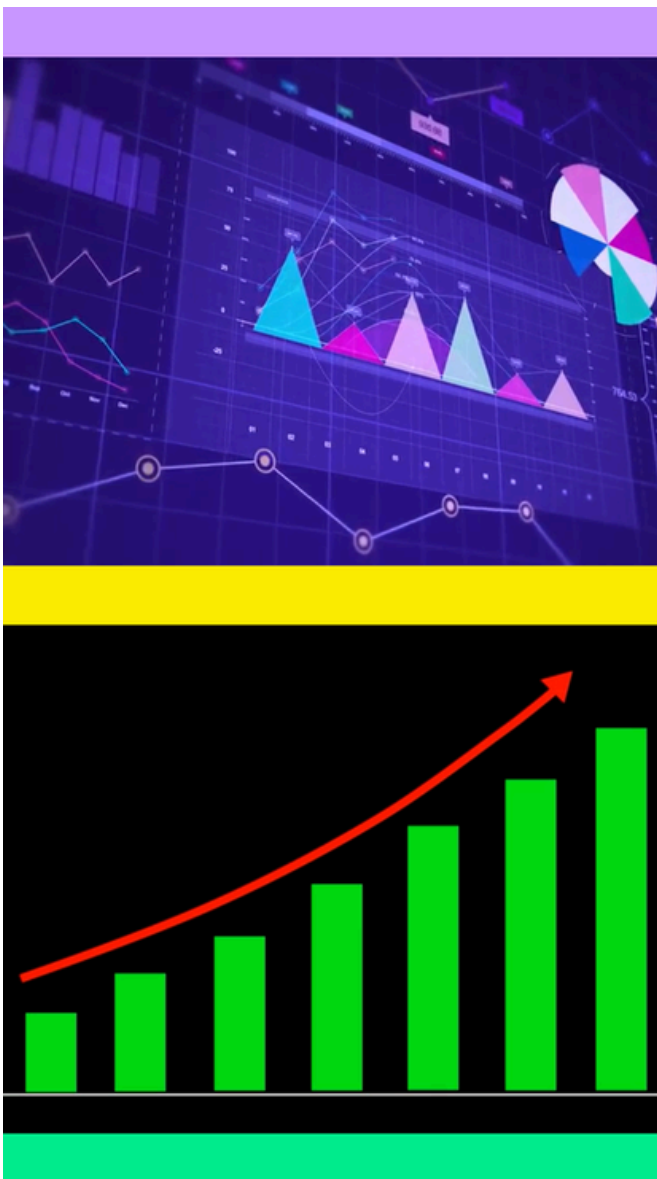
# Pervaziv AI



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# EXECUTIVE SUMMARY



We strive to make Cortex the *fastest Agentic AI, Coding/Security platform* compared to standalone offerings, with a strong focus on real-world performance and responsiveness.

We analyzed performance telemetry across 7 distinct operation types, spanning both frontend and backend layers. The data reveals a clear pattern: 86% of calls are lightweight frontend operations, yet backend-dependent calls account for nearly all cumulative response time. Slow calls were flagged as bottlenecks and has since been heavily optimized, reinforcing a targeted, high-impact performance strategy.

We clearly expose performance disparities, helping engineering and product teams prioritize optimizations where they matter most, in backend-heavy workflows that dominate user-perceived latency.

# KEY METRICS

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## Operational Categories

- 7 categories
- From chat messages to security scans
- Includes MCP performance
- Storage performance

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## Bottlenecks Detection

- Frontend vs backend bottlenecks
- Frontend ~ 5% of total time spent
- Backend ~ 94% of total time spent

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## Optimization - Before and After

- Gains ranged from 75 - 96%
- 94% faster operations than before
- Absolute improvement in some cases is 16x

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## Memory Usage and Analysis

- Memory usage reduced for various categories
  - JS Heap usage optimized
-



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## QUESTIONS? CONTACT US.



<https://pervaziv.com>



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