

GlobalLogic

A Hitachi Group Company

AI Voice Assistant for In-Vehicle Navigation Reduces LLM Costs 10×

As vehicles become more connected and intelligent, drivers expect navigation systems that understand natural conversation—not rigid commands. A leading mobility technology provider partnered with GlobalLogic to develop an AI-powered navigation assistant that brings Generative AI into the vehicle, enabling intuitive voice interaction and smarter route intelligence. The result is a more natural, hands-free navigation experience that redefines how drivers interact with their vehicles.

10X

reduction in LLM costs

28%

improvement in response latency



Challenge

A leading mobility technology provider faced growing pressure to make in-vehicle navigation **more intuitive and responsive** as drivers increasingly expected natural voice interaction.

Existing systems relied heavily on manual inputs and struggled to process complex natural language queries, while large prompt sizes and slow response times limited performance.

These **constraints created friction in the driving experience** and made it difficult to deliver safe, seamless, hands-free navigation.

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Value Created

- **Conversational In-Vehicle Navigation:** GenAI enables natural language voice commands for safer, hands-free driver interaction.
- **LLM Cost Optimization:** Domain-tuned Llama models dramatically reduced inference costs while maintaining high performance.
- **Real-Time Navigation Intelligence:** Faster responses enable seamless voice queries and smarter route guidance.

Impact

- **~10x lower LLM costs achieved** through domain-specific fine-tuning of Llama models and optimized inference architecture
- **28x faster response latency** improved real-time voice interaction for in-vehicle navigation queries work.
- **Enhanced natural language understanding** enabled intuitive, hands-free voice navigation and reduced driver distraction.