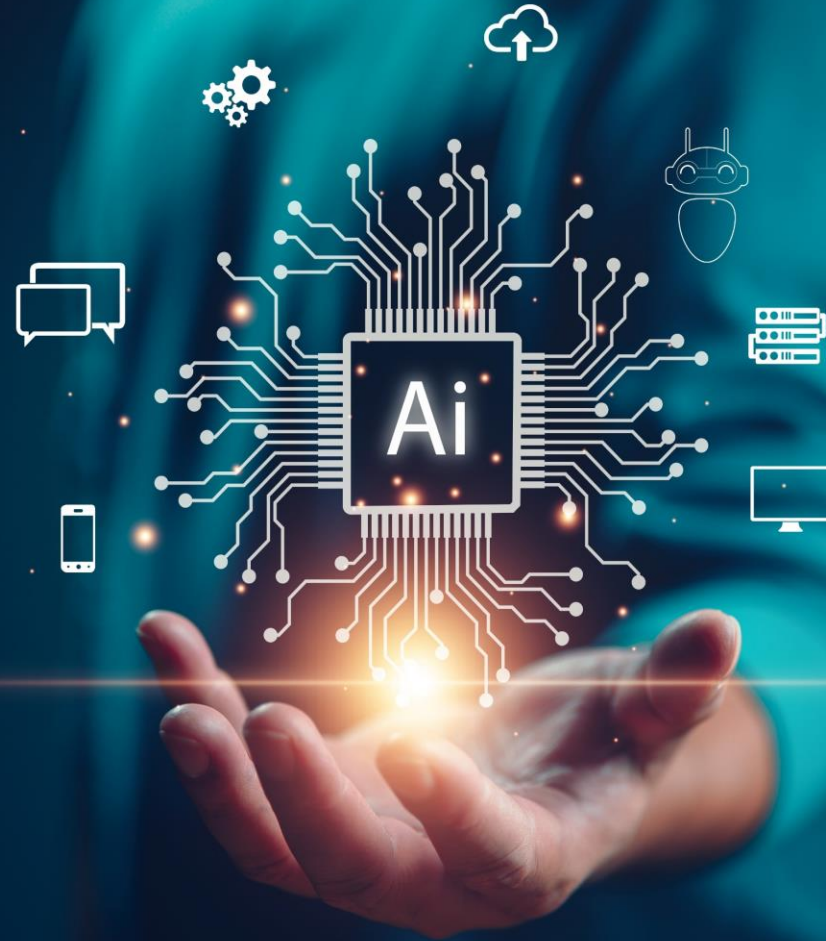
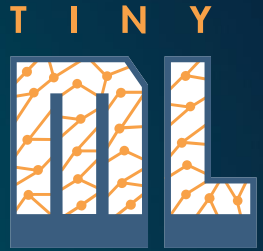


**tinyAI Forum on Generative
AI on the Edge
March 27-28, 2024**





Generative AI on the Edge for Connected Vehicles & Mobility

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BGSW, India

Disclaimer:

The opinions expressed in this presentation and on the following slides are **solely** those of presenter and **not** necessarily those of the organization that he works for.

Agenda

- Why GenAI on Edge
- GenAI in Automotive: Current Advancements
- GenAI on the Edge for Connected Vehicles: Unlocking Hyper Personalization
- Best Practices: Architecture, Optimization and Recent Algorithms
- Challenges & Future Research Directions
- Key Takeaways

Why GenAI on the Edge?



Hyper-personalization



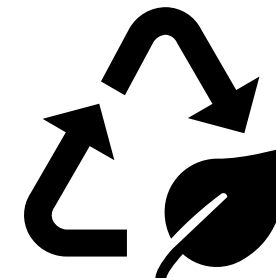
Privacy



Reliability



Cost

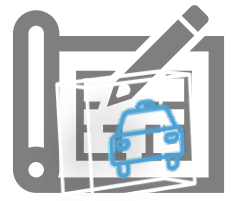


Energy

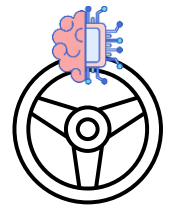
Network Bandwidth, Latency are very well-known benefits for **on-device AI**

Increased trends to make the GenAI more “accessible” and “affordable”

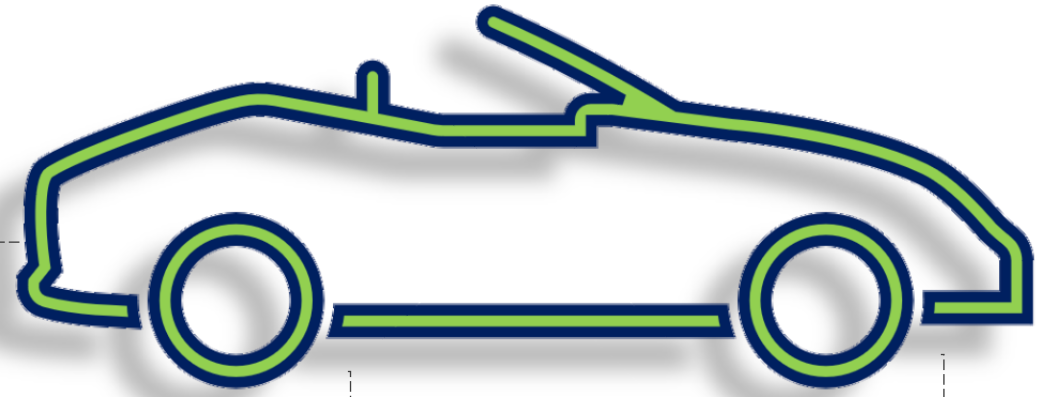
GenAI in the Automotive Domain: Early Applications



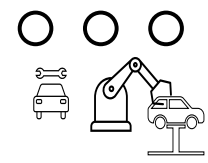
Designs and prototyping



In-vehicle virtual assistant



New scene generations, perception, verification & testing

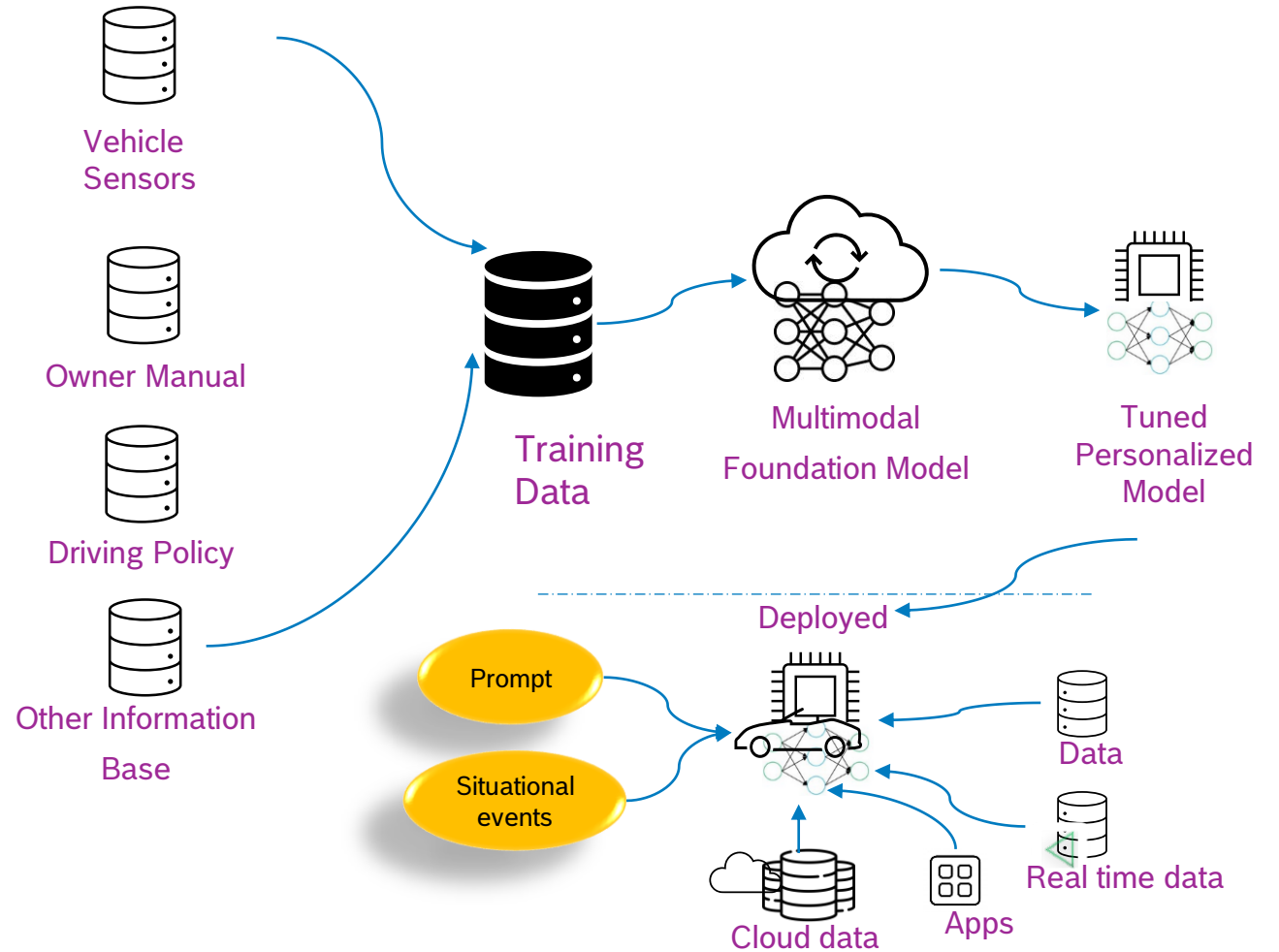
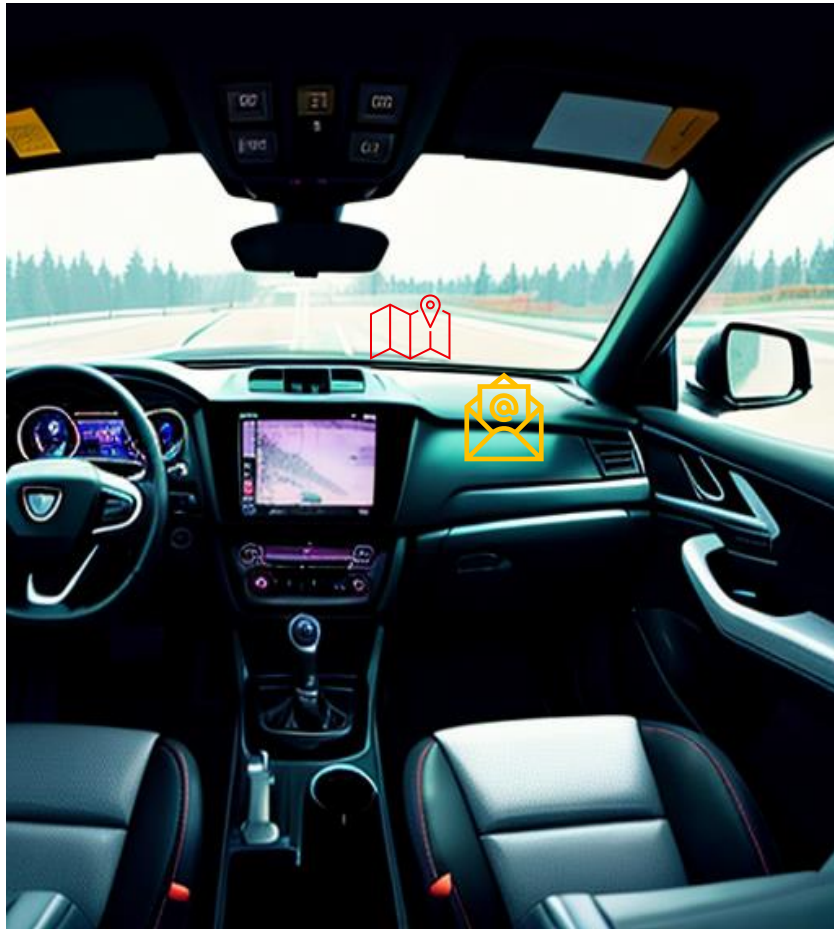


Others

GenAI market in automotive is predicted to grow at a CAGR of 24.03% during 2023-2032*

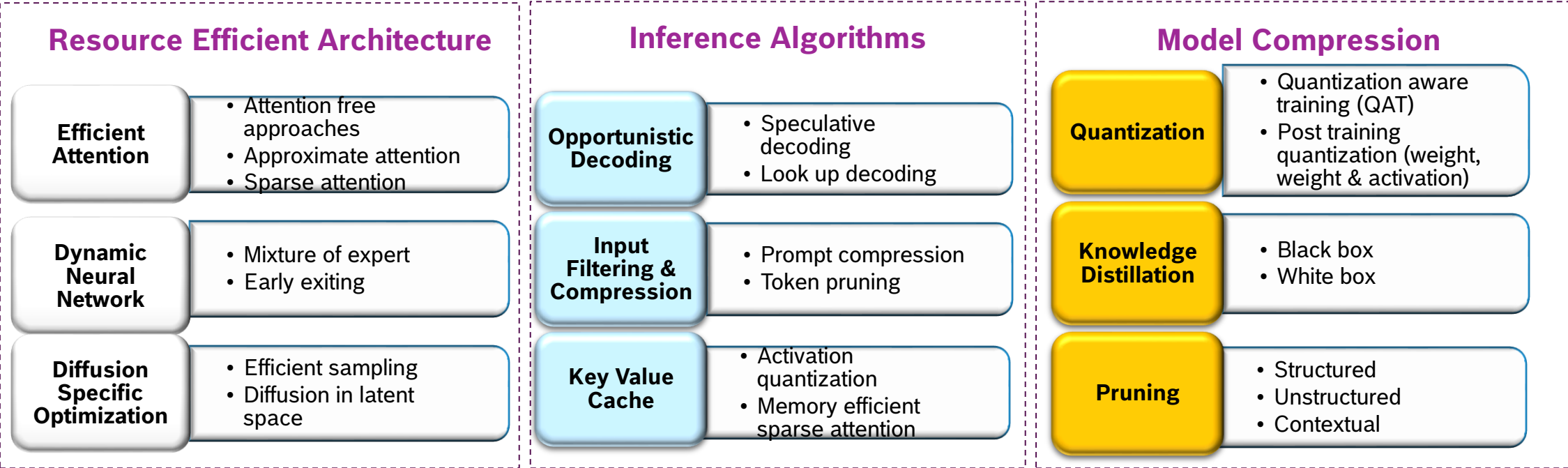
GenAI on the Edge for Connected Vehicles: Unlocking New Opportunities

Towards Hyper Personalization



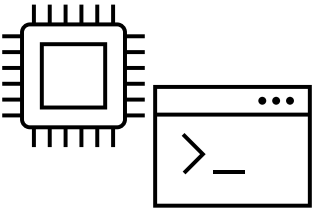
Leveraging contextual information to enhance customer experiences

Bringing GenAI on the Edge: Best Practices



Resource efficient systems and Finetuning algorithms are another focus research areas for bringing Gen AI on the Edge

Some Open Research Challenges: An Automotive Domain Viewpoints



Hardware-Software
Co-design



Energy Efficient
Inferencing



Ethical Implications
& User's Trust



Standardization &
Partnership

Novel Architecture, Edge-cloud collaboration, and its detailed evaluation deserve extensive investigations

Key Takeaways

- GenAI on the edge for automotive domain **offers** new value propositions for both OEMs and customers
- Research efforts are needed to “fine tune” LLM/Foundation model- **General vs. Personalized**
- **Hybrid AI** is very promising to address concerns for light-weight multimodal foundation model on the edge
- Trade-offs in user experiences- **Offloading AI workloads** on cloud vs. edge



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Thank you !

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