

The Dragon Drive Innovation Showcase: Advancing the state-of-the-art in automotive assistants

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The Dragon Drive innovation showcase is a demonstration platform used by the Nuance automotive unit to display the latest of its automotive assistant innovations. It combines a wider range of innovative features under one hood, many of which are still in prototype stage and will typically reach market readiness in one to three years.

A strong focus for the innovation showcase lies in highlighting to the industry and broader public what new artificial intelligence and multi-modal technologies can do to advance the state of the art in intelligent personal assistants. Some of these technologies are:

- **Voice Biometrics:** identifies who is speaking by using voice fingerprinting technology. This allows to load the user's profile on the fly and resolve e.g. references like "home" or "work", or to take personal preferences into account when e.g. searching for a restaurant.
- **Always On:** removes the need to press a PTT button or use a wakeup-word to engage with the assistant. Just like a human would, the assistant is able to recognize which statements are targeted to the assistant and which are not.
- **Contextual Reasoning:** allows the system to consider the current situation and its circumstances together with general world knowledge when making recommendations, thus enabling a much more intelligent behavior.
- **Personalization:** enables the system, with the help of a Machine Learning model to learn certain likes, dislikes and preferences of individual users. It is used to realize smarter recommendations that match an individual driver's needs.
- **Gaze detection:** allows to track the user's line of sight and answer statements like "What is this building?", thus reducing human distraction levels in advanced human-machine communication.

In this paper we describe the above-mentioned features in more detail and lay out how each of these features plays its part in realizing a truly intelligent automotive assistant that solves many of the problems that drivers and passengers encounter on their daily journeys.