nGene 3 – Empathic Intelligent Cockpit

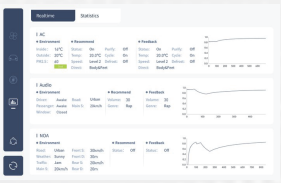
Like the brain of cockpit, the empathic engine actively provides users with personalized human-machine interaction service and experience within the intelligent cockpit based on contextual information and user-feedback perceptions, which enables to build differentiated intelligent cockpits finally

Technical Details

- **In-loop learning iteration based on user feedback**
  The empathic engine can learn user preferences and iterate updated models by introducing user feedback into a closed loop, the concept of which is the same as the RLHF method currently adopted by ChatGPT
- **Personalized recommendation models for adaptive learning**
  Different from existing scenario engines based on pre-defined rules, the empathic engine is a personalized recommendation model that can be iterated and updated as per user feedback, which will achieve adaptive dynamic adjustment without pre-definition of rules
- **Mini model + mini data + mini computing power**
  Owing to the small size of AI model and low requirements of input data volume and computing power, the empathic engine ensures independent model and data operations within the vehicle to avoid any external communications, thus protecting user privacy and data security

Features

- **Contextual human-machine interaction service predications and recommendations**
  The empathic engine can made proper human-machine interaction service predications and recommendations based on internal and external contextual perceptions
- **Learn different user preferences iteratively based on user feedbacks**
  The empathic engine can continuously learn user preferences iteratively based on user feedback to predications and recommendations, thus realizing differentiated smart cockpits finally
- **Typical scenario examples**
  Implement intelligent in-vehicle air-conditioning system adjustment, intelligent media player adjustment, NOA enabling/disabling recommendation and other scenarios. Take the air-conditioning system as an example, the empathic engine will actively and intelligently adjust the air-conditioning temperature, wind speed, wind direction, air purification and other settings according to internal and external environmental temperatures and PM2.5 value. Users can also manually adjust the settings to provide feedback, which allows the engine to continuously iterate and update AI models on the background and learn and remember user preferences



Application

- As the hardware configurations for the intelligent cockpit is improving, the differentiation of software will become an important factor of the experience. JOYNEXT empathic engine will greatly improve human-machine interaction service experience within the cockpit
- JOYNEXT empathic engine is composed of a series of AI mini models with smaller computing requirements, which can flexibly adapt to all SOCs and platforms and realize rapid update through OTA