

AI-POWERED VOICE ASSISTANT FOR ROUTINE LIVESTOCK MONITORING

Theatre Session 1 29/06/2026

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ABOUT ME



**SUBJECT AND
PROBLEMATICS**



MATERIALS



**DEEP LEARNING
MODELS**



DATA WORKFLOW



**CONCLUSION AND
TAKE-HOME MESSAGE**

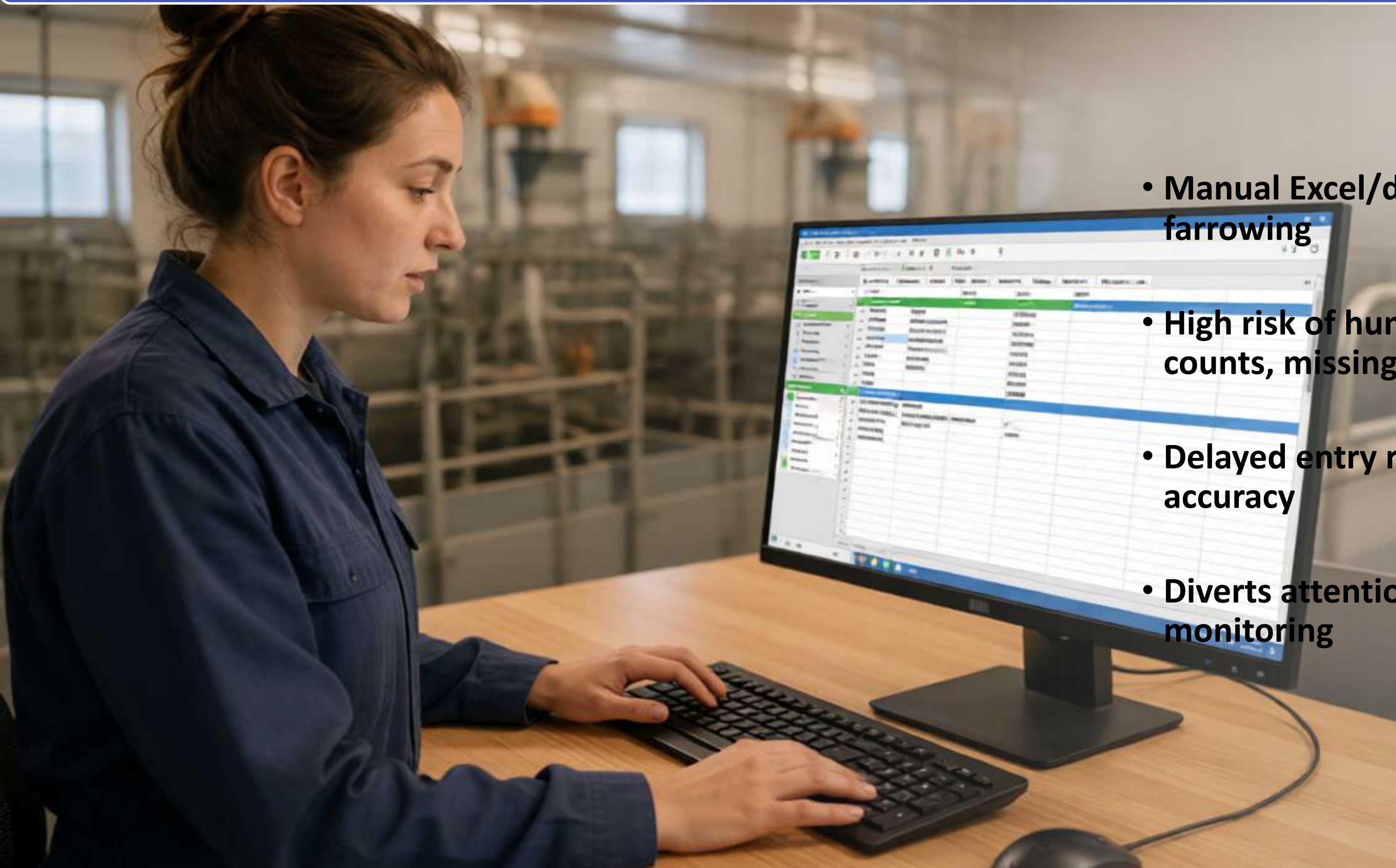


IFIP Institut of pork, research office, Pacé, France



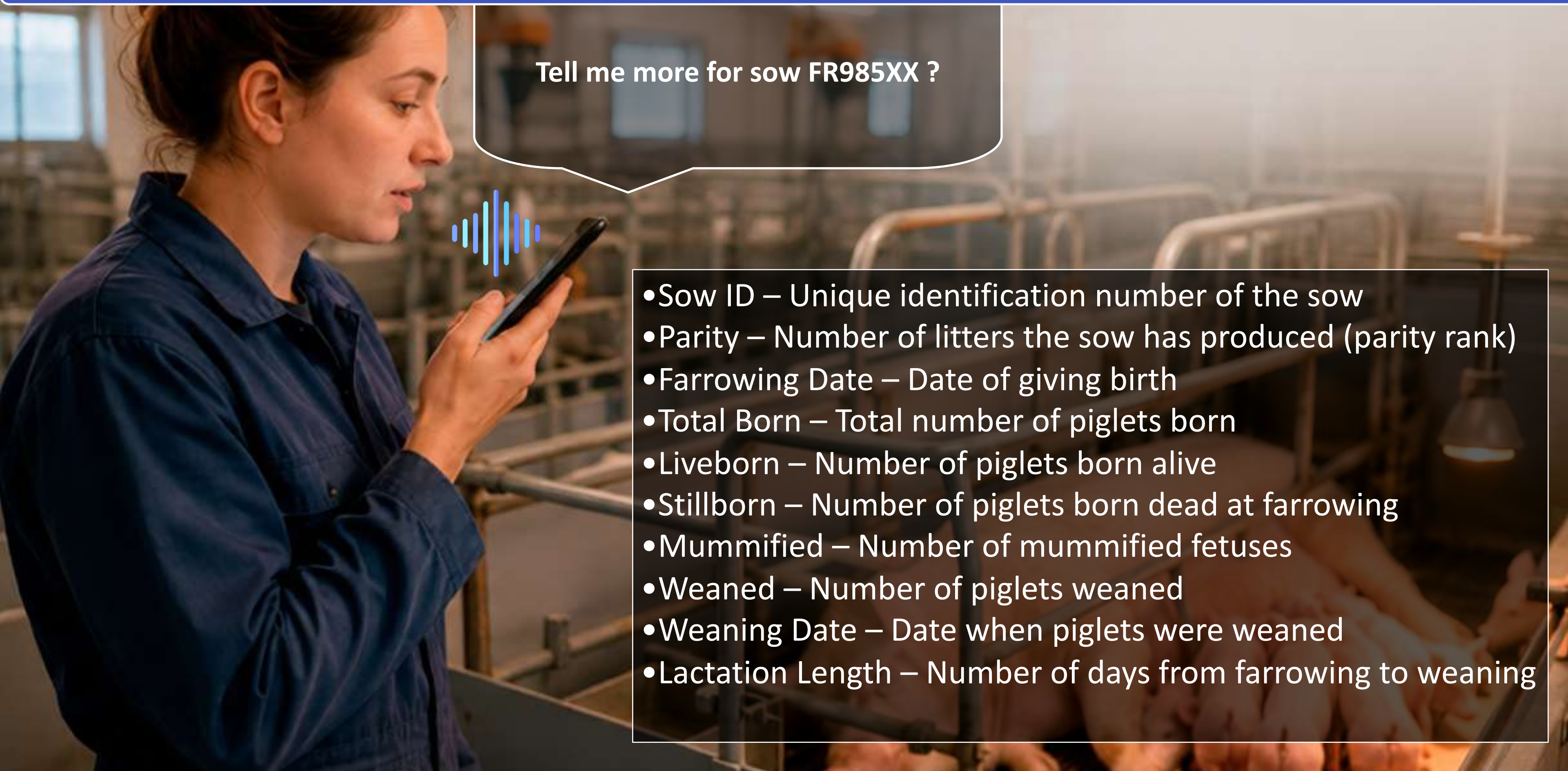
IFIP Institut of porc, laboratory and pig farming, Romillé, France





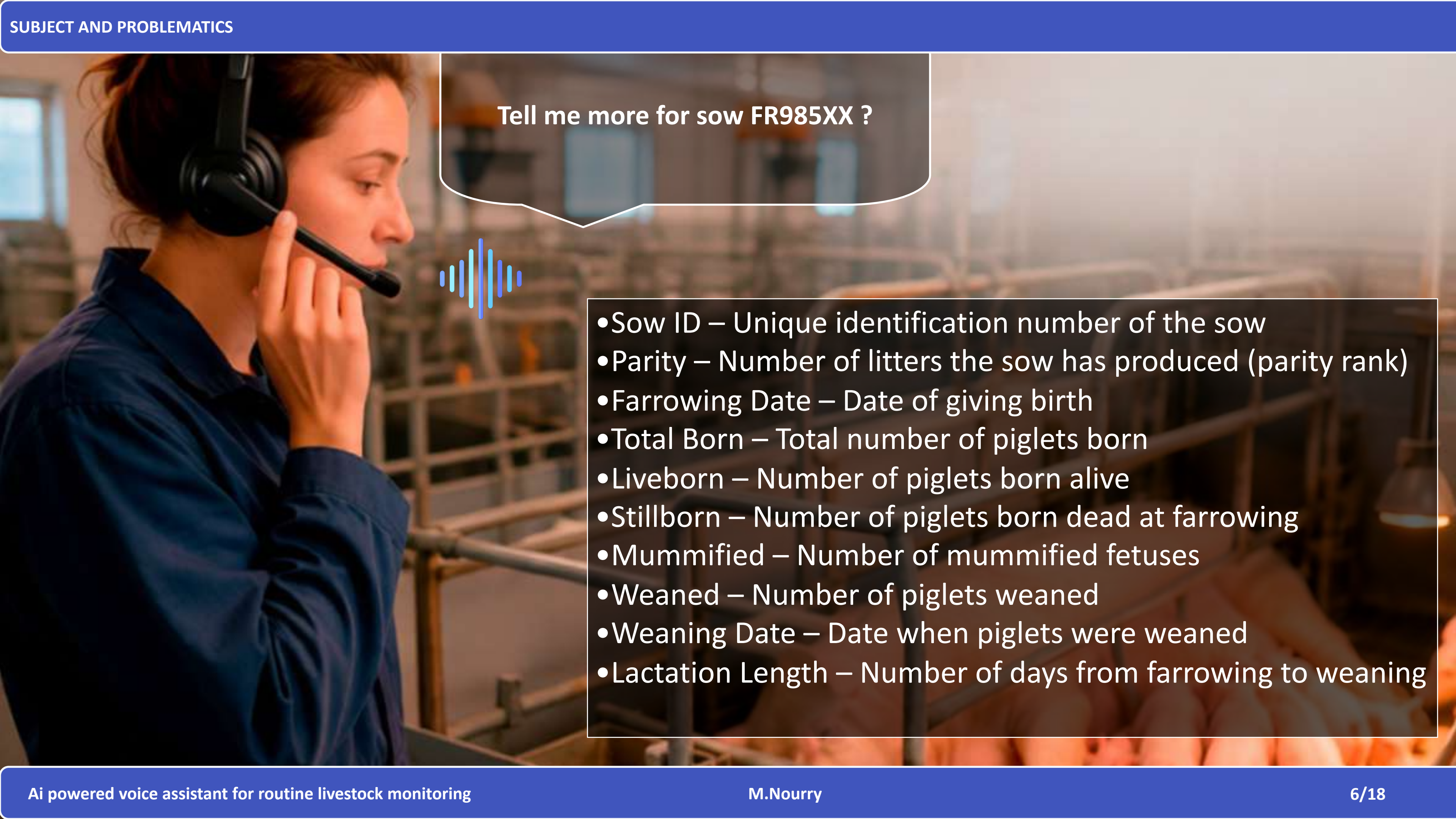
- Manual Excel/data entry is slow during farrowing
- High risk of human error (wrong counts, missing piglets)
- Delayed entry reduces real-time accuracy
- Diverts attention from animal monitoring





Tell me more for sow FR985XX ?

- Sow ID – Unique identification number of the sow
- Parity – Number of litters the sow has produced (parity rank)
- Farrowing Date – Date of giving birth
- Total Born – Total number of piglets born
- Liveborn – Number of piglets born alive
- Stillborn – Number of piglets born dead at farrowing
- Mummified – Number of mummified fetuses
- Weaned – Number of piglets weaned
- Weaning Date – Date when piglets were weaned
- Lactation Length – Number of days from farrowing to weaning



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Hardware	Programming languages and software
GPU RTX 4080 SUPER 16 GB	Python
CPU core i7 20 cores	Bash (linux)
32 GB RAM	Android studio
Database server	
Android smartphone	



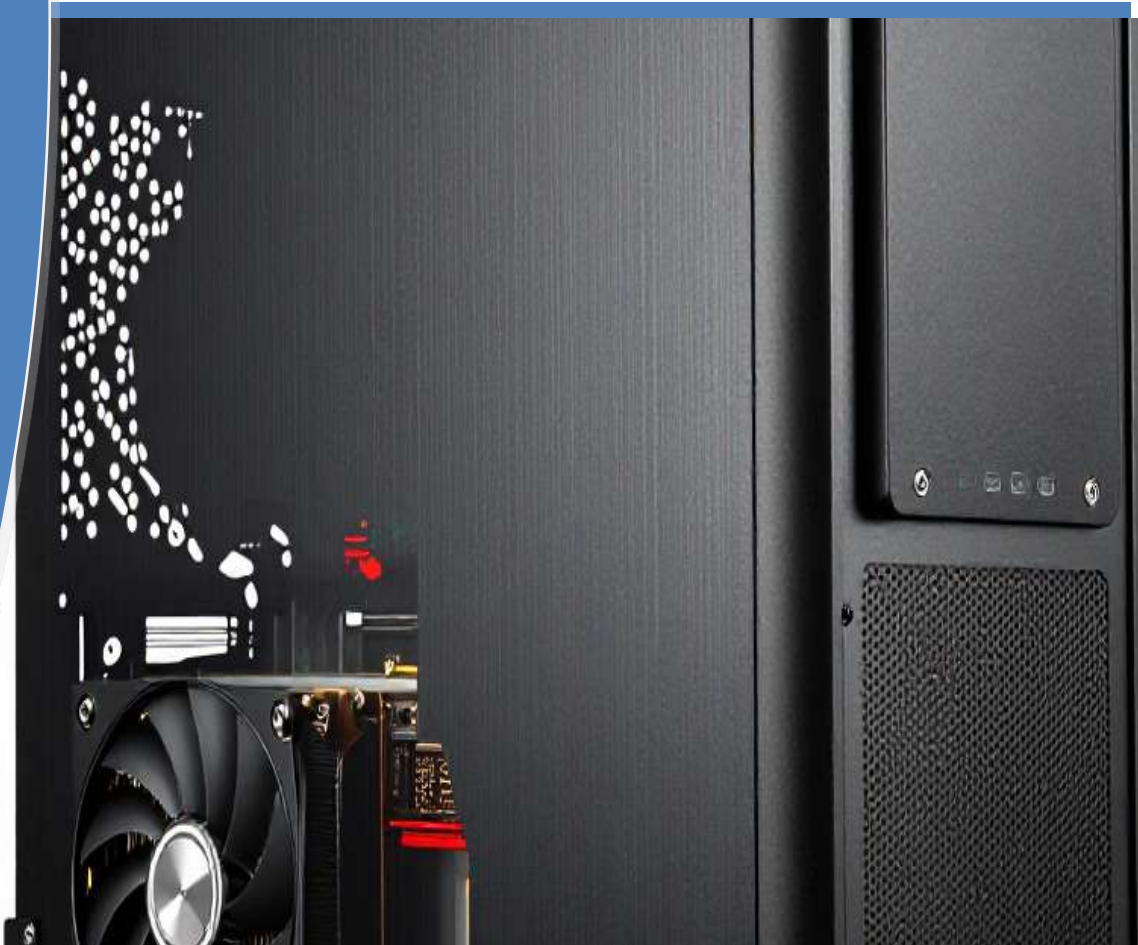
Speech recognition

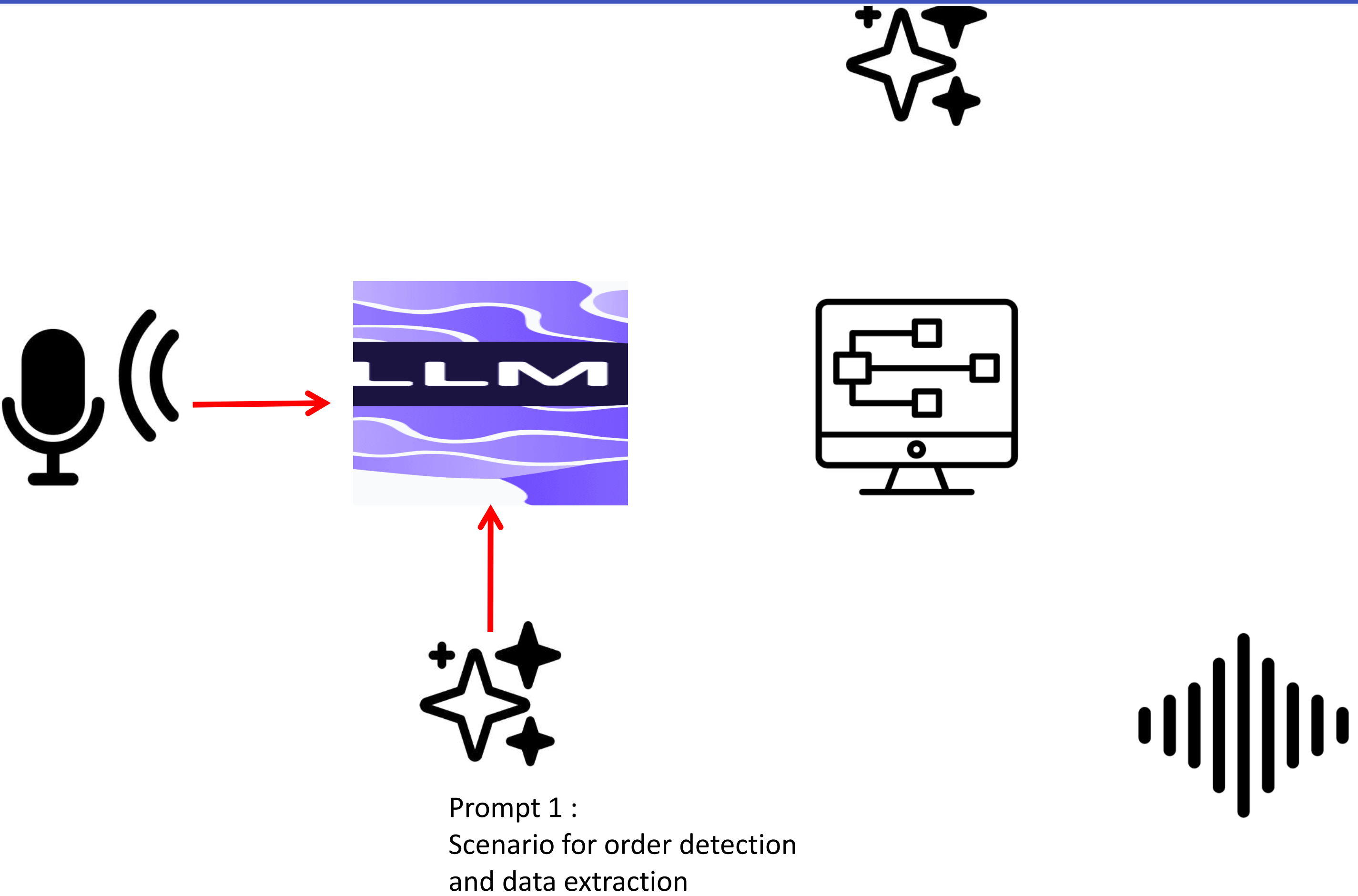
- Push to talk record the speech
- Creation of embedding audio signal 64 base support
- Transmitting via WIFI network
- Local GPU server receives
- Convert in 16 kHz sampling
- Whisper AI model convert that time series audio signal into text

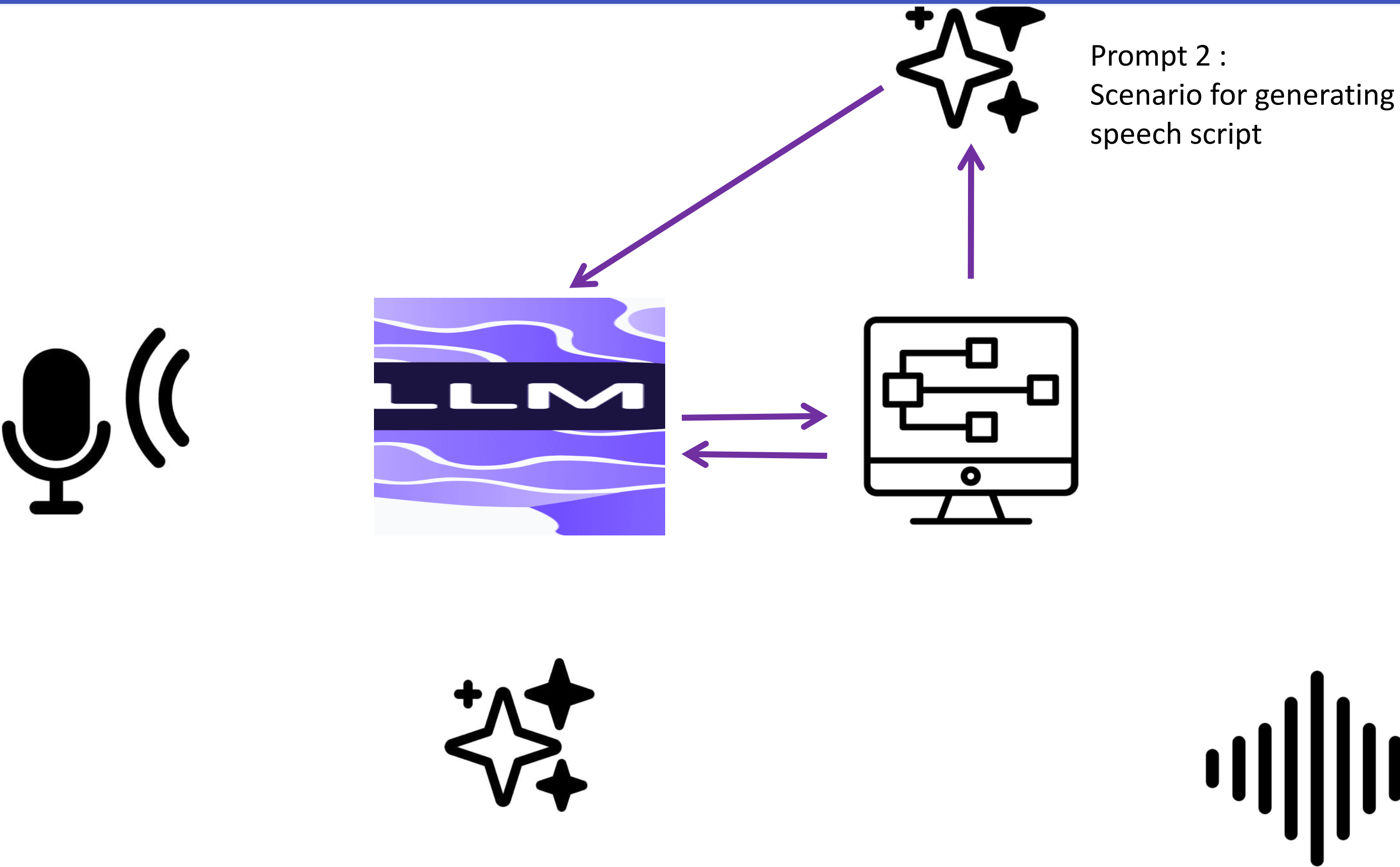


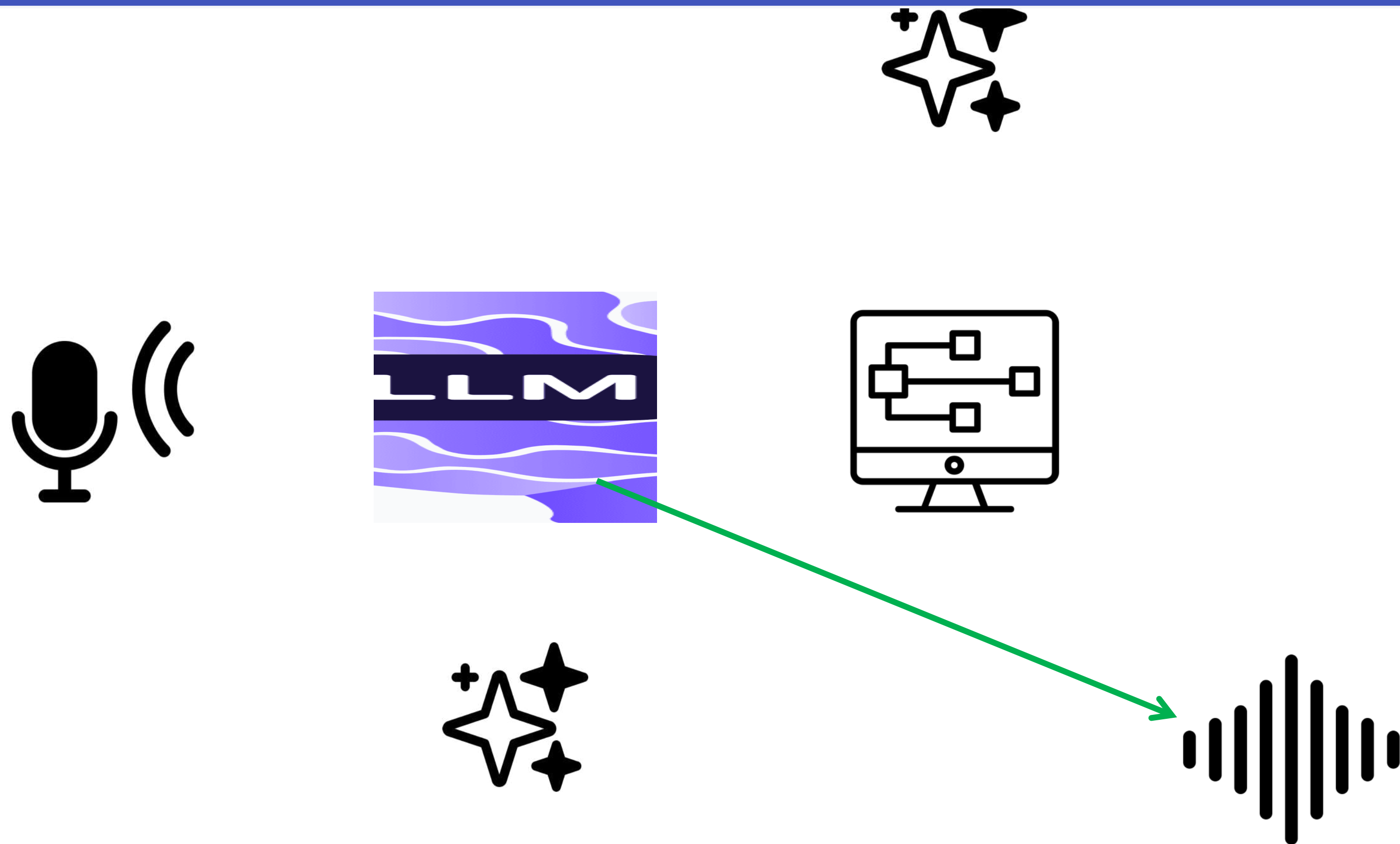
Instruction detection

- Creating embedding with Text extracted and LLM prompt
- Getting the LLM JSON response
- Use the decision tree to choose the best SQL request to database



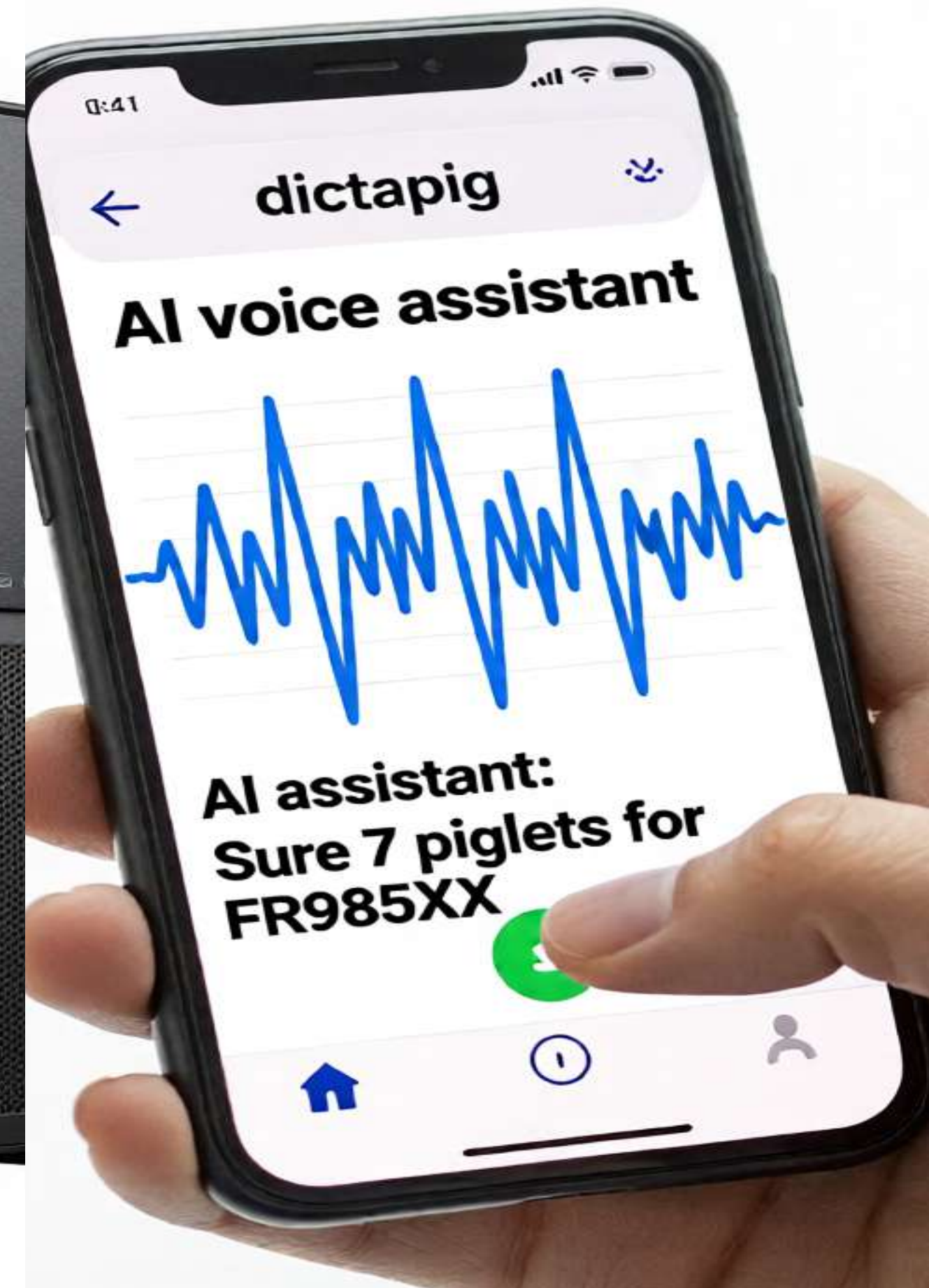


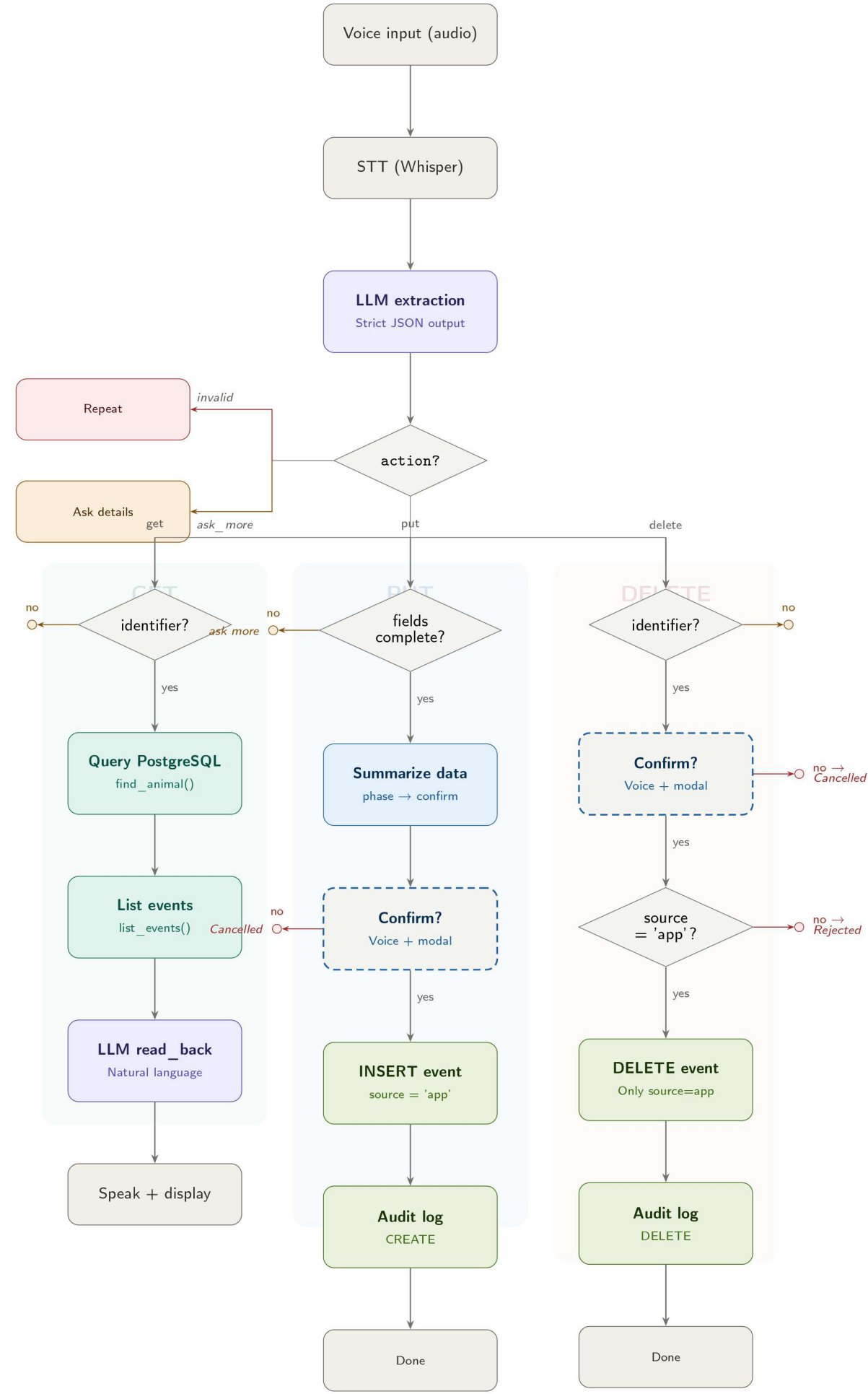


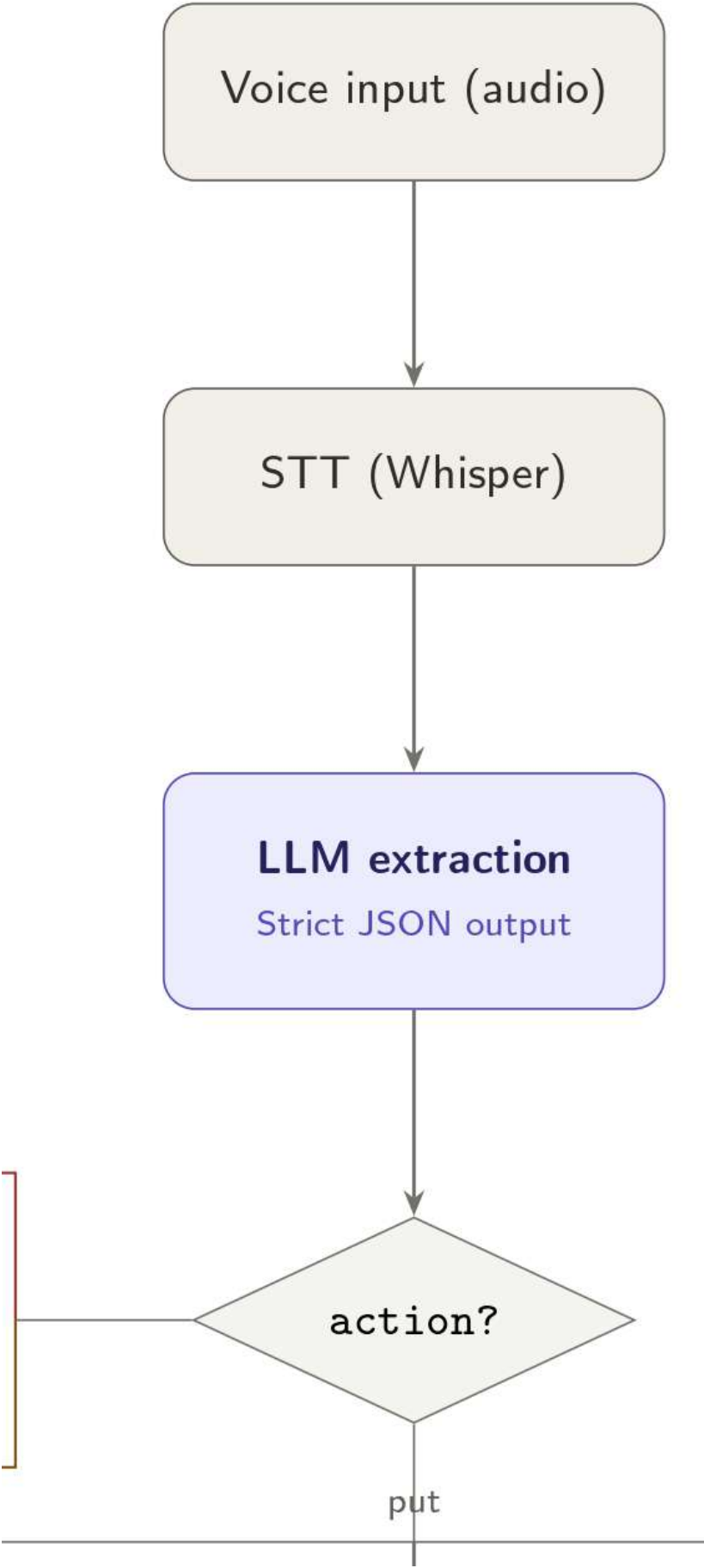


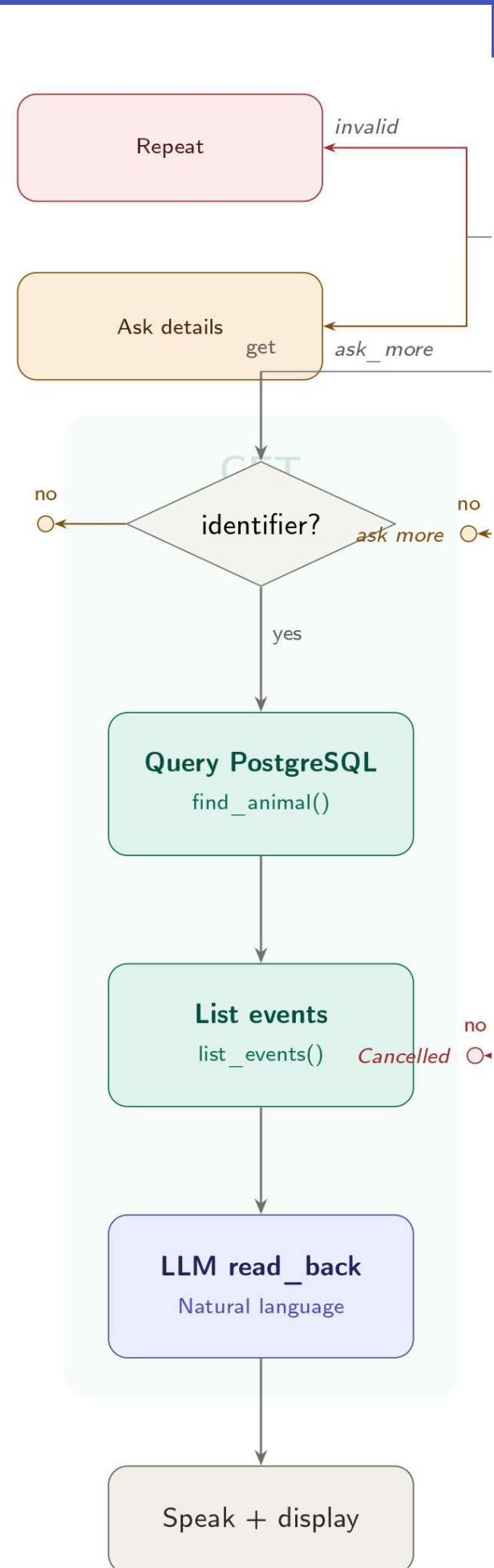
Binary decision tree

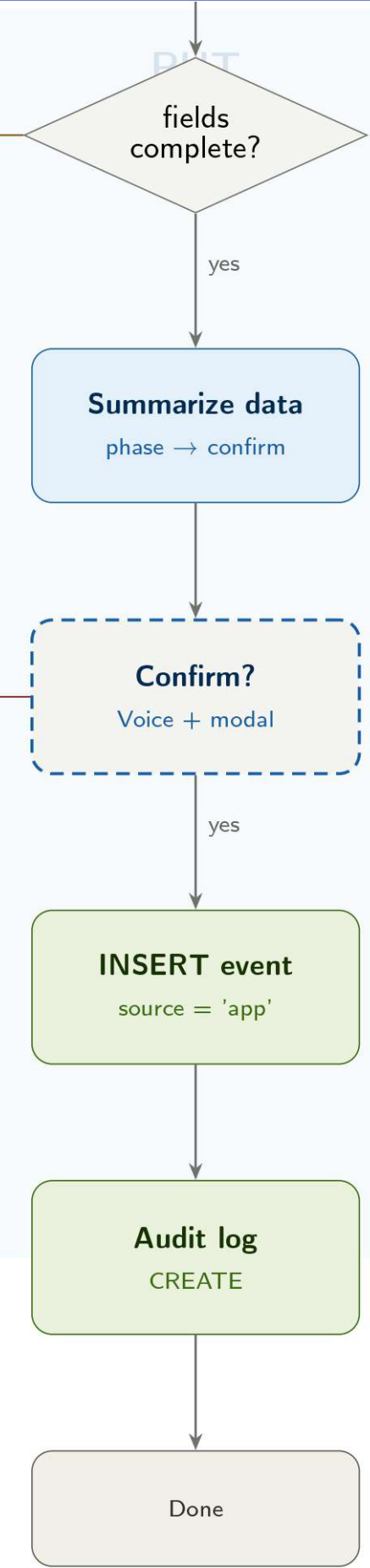
- Creating embedding with Text extracted and LLM prompt
- Getting the LLM JSON response
- Use the decision tree to choose the best SQL request to database
- All instructions : Get, Put, Delete, Ask more, Invalid
- Get : get informations from an animal
- Put record an event
- Delete : Delete one input
- Ask more : ask more details
- Invalid : When the speech is out of the context

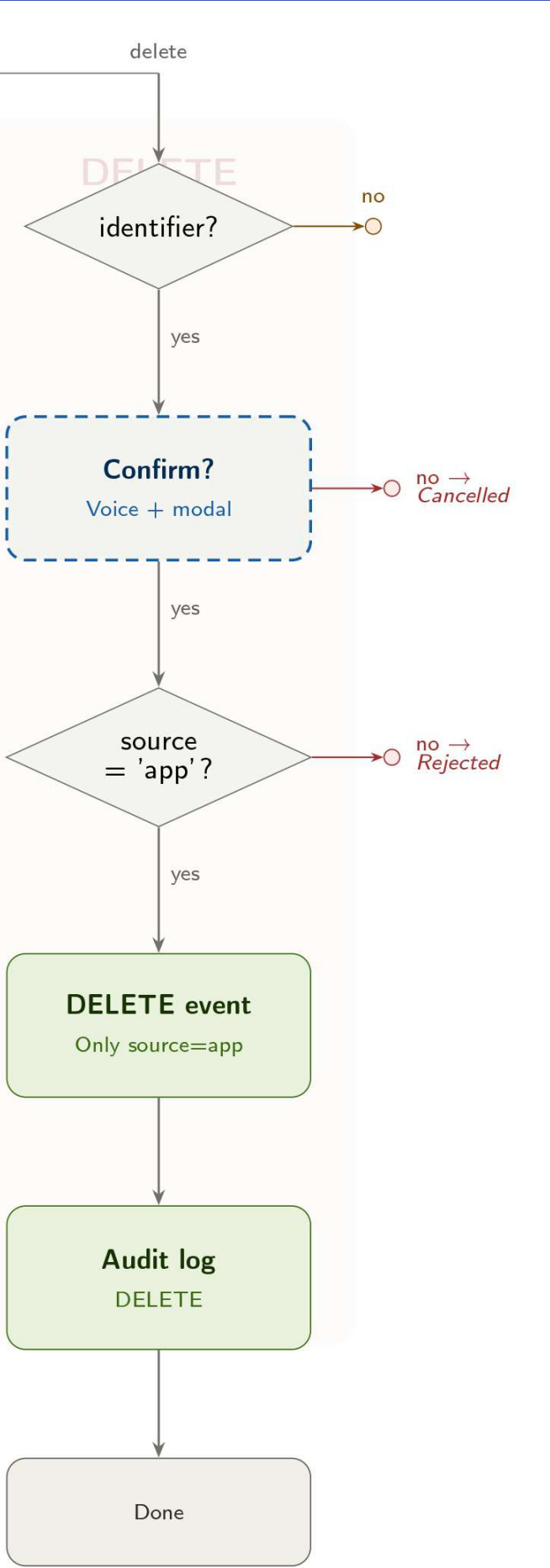


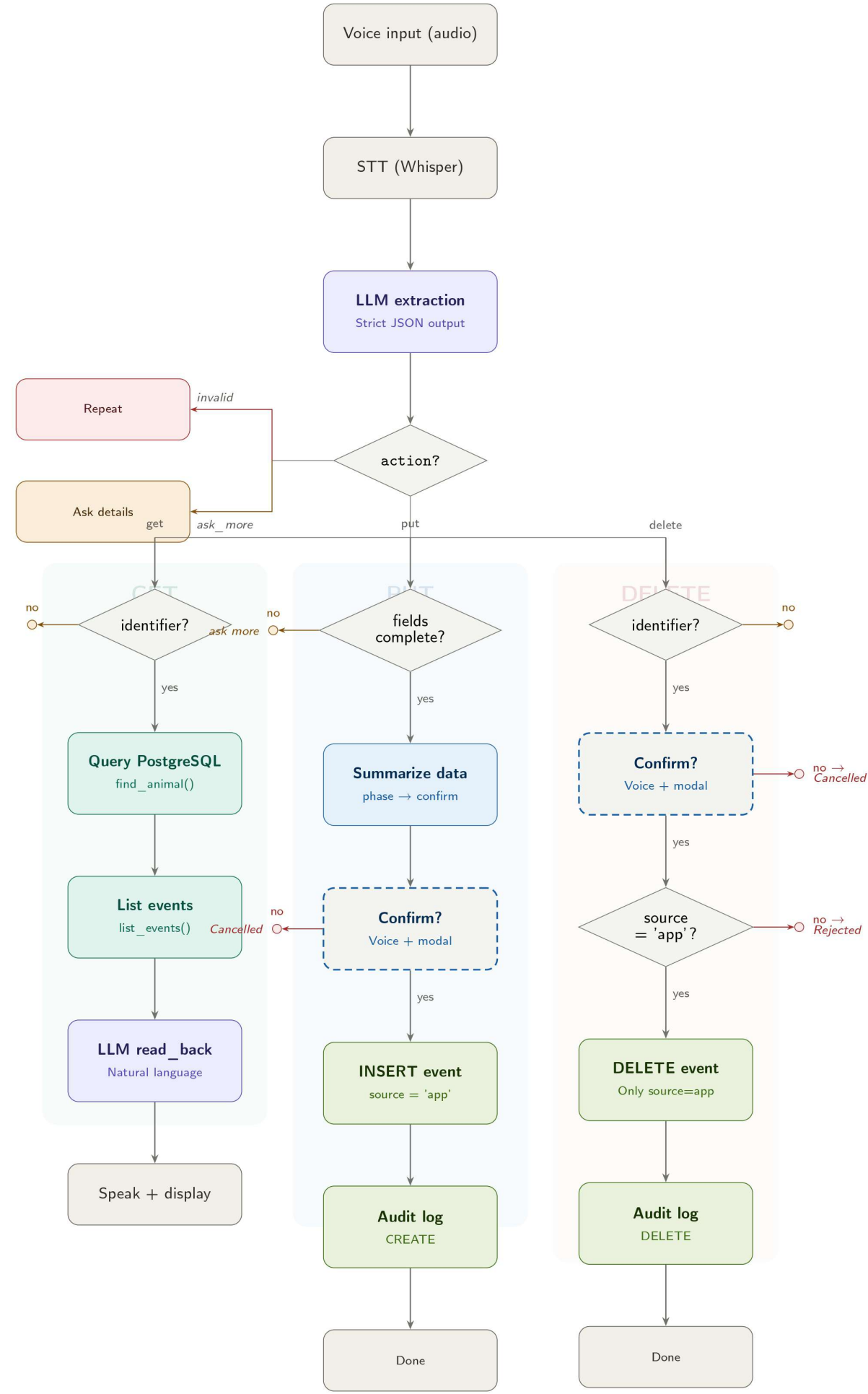


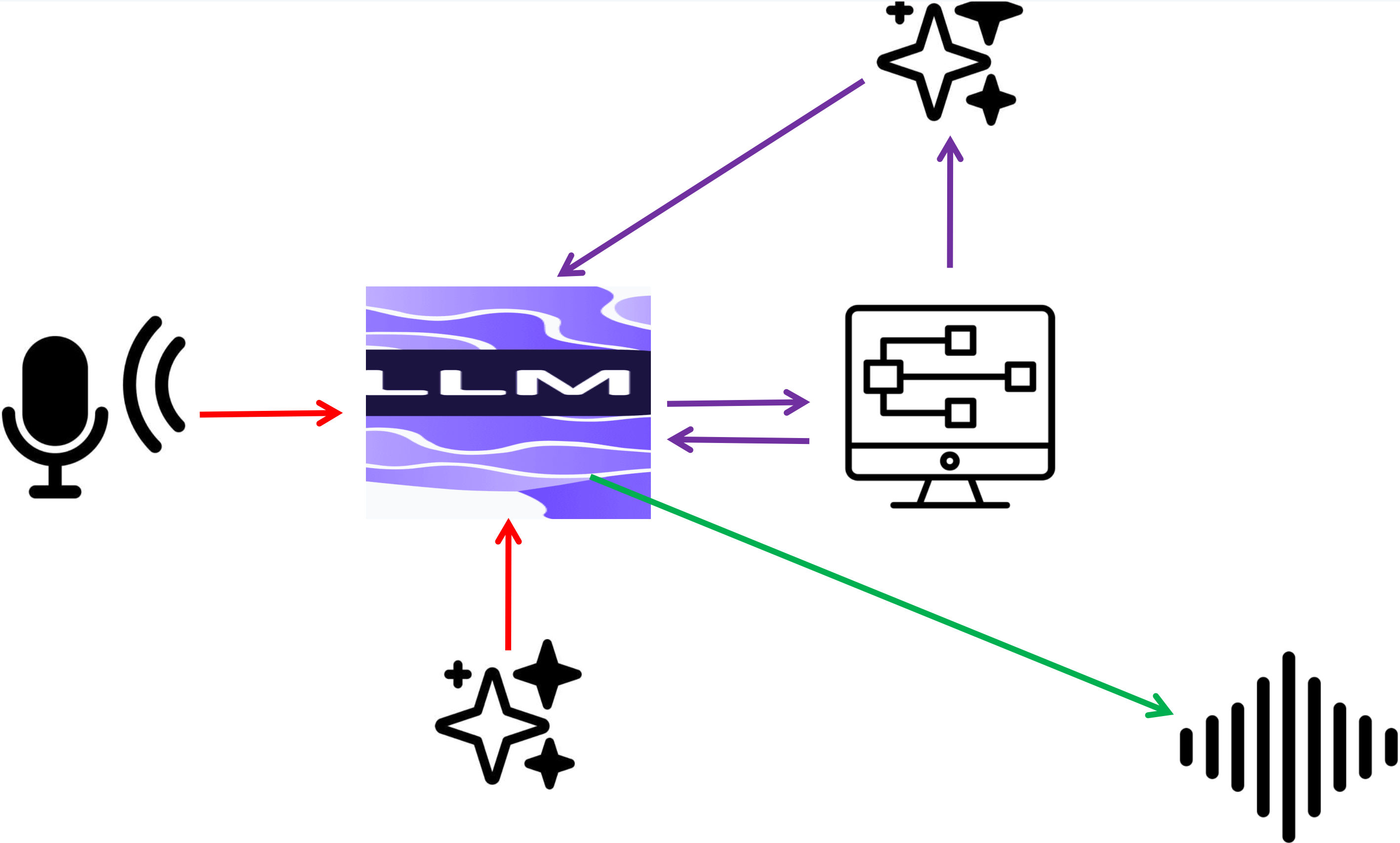


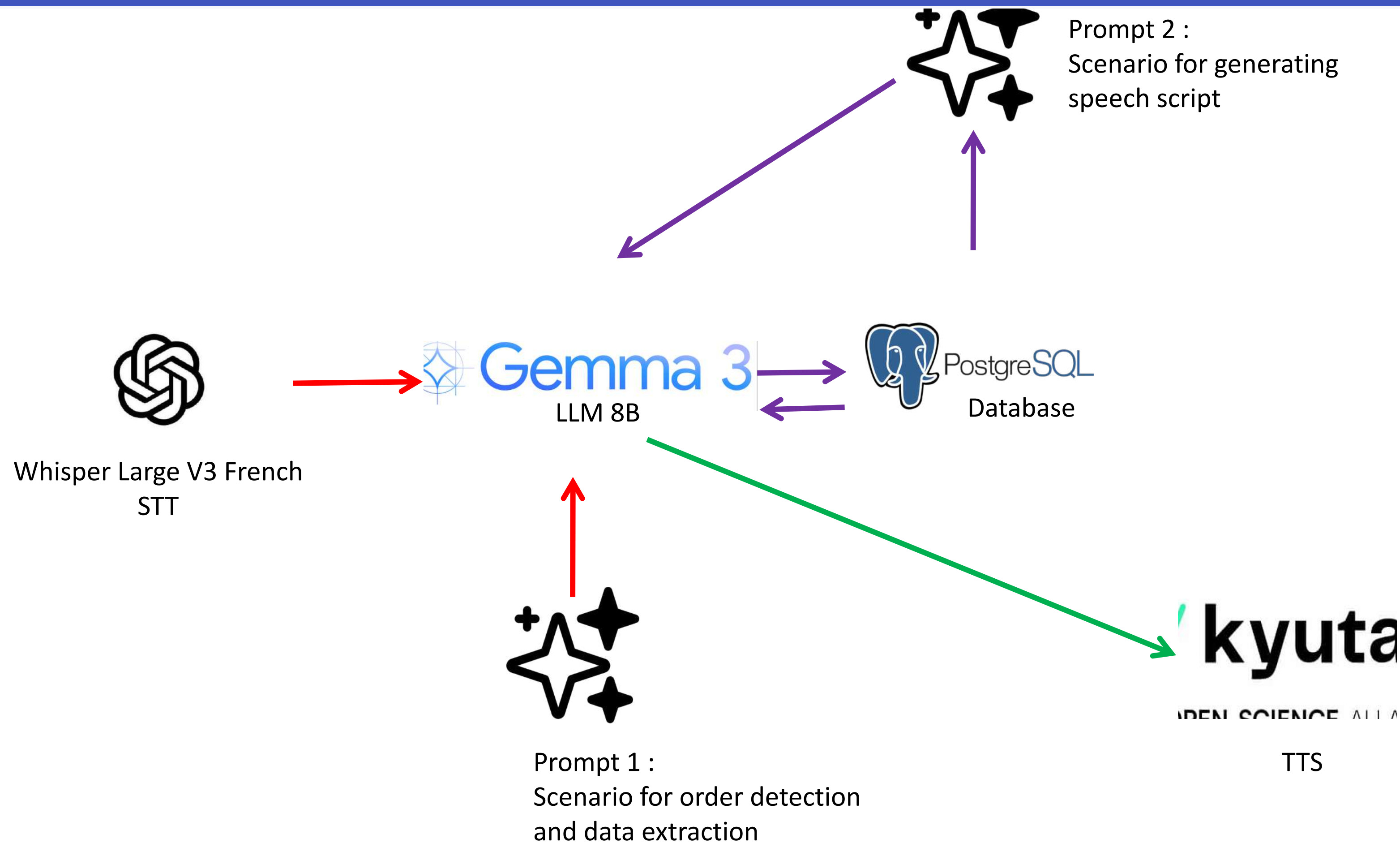












DictaPig turns natural speech into structured database operations for pig farming, in French or English, hands-free.

One voice command triggers a full pipeline: speech recognition, LLM extraction into strict JSON, smart dialogue with confirmation, and safe persistence to PostgreSQL.



Partner for your innovations

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