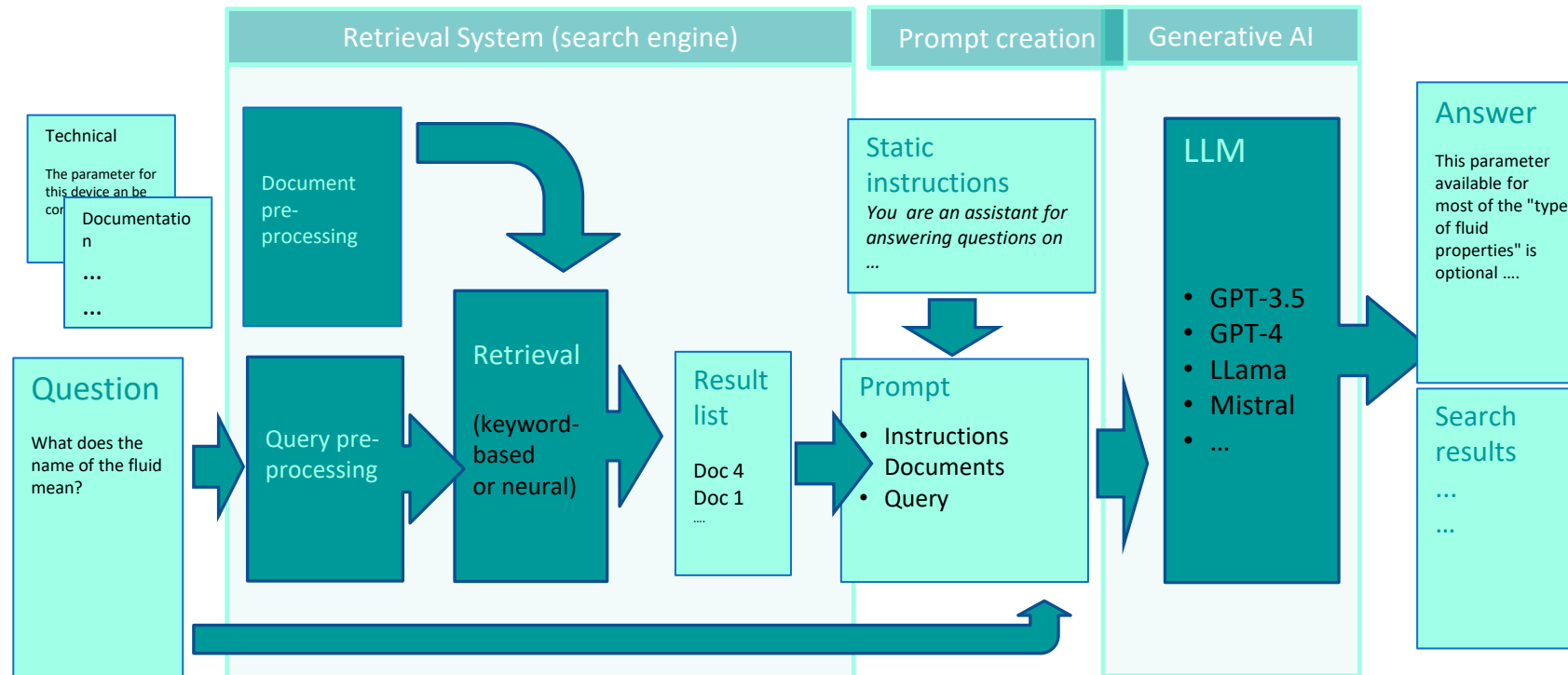


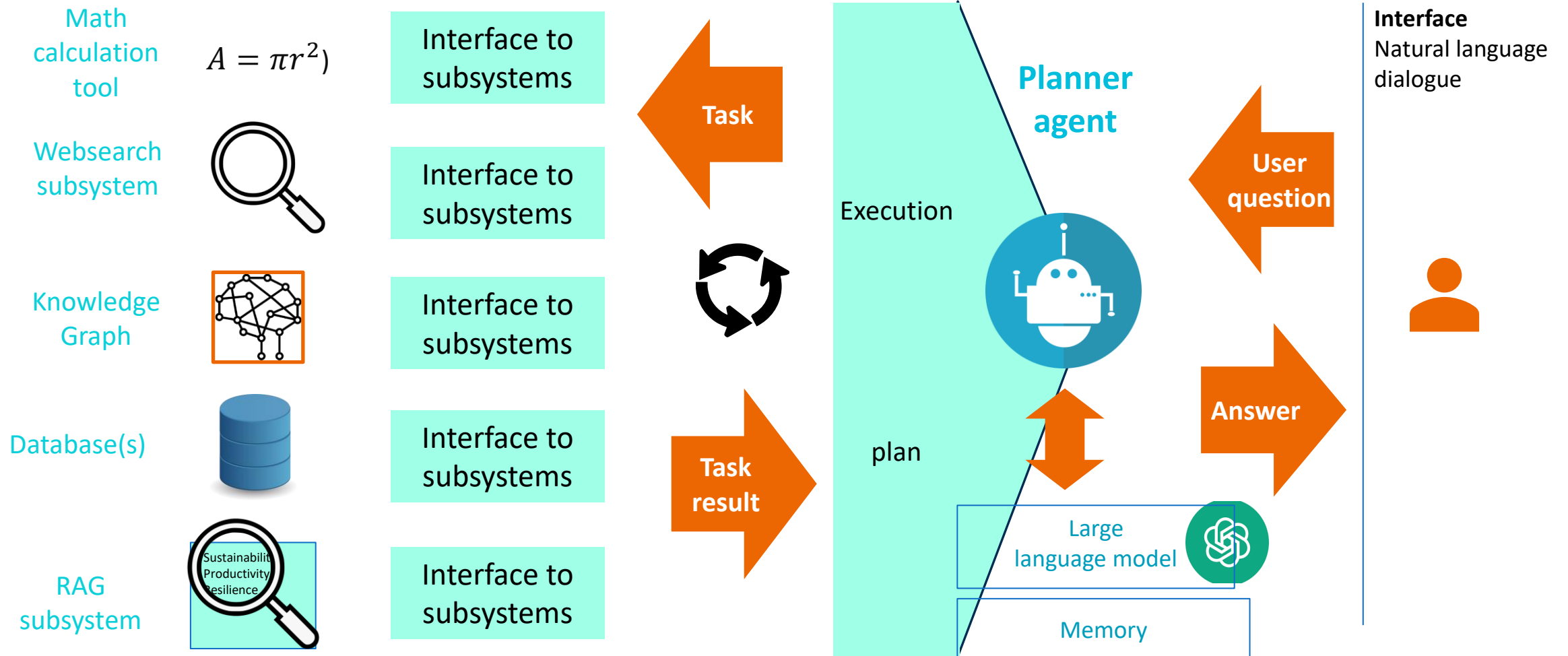
Agents

::: MASTERSEMINAR SUCHMASCHINEN & RAG, CIS, SOMMERSEMESTER 2025 :::

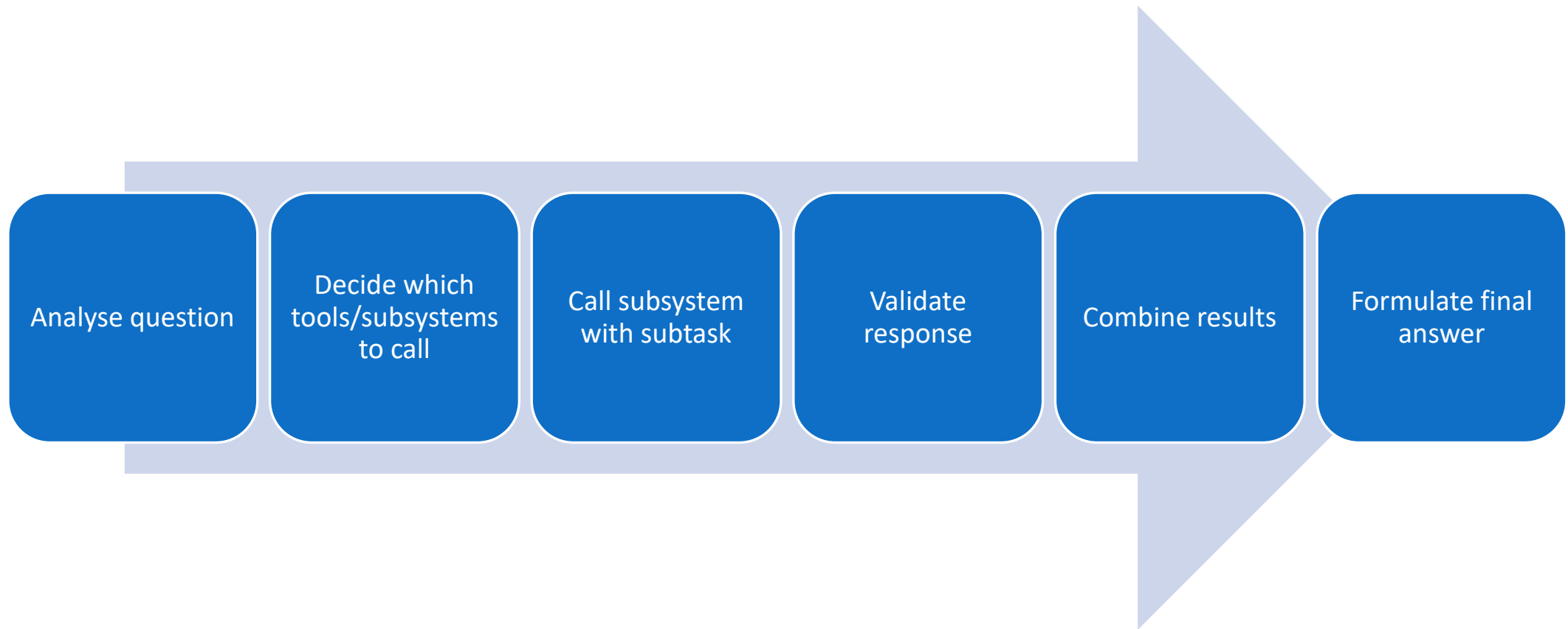
Recap: RAG architecture



(Multi-)agent system



Agent systems: Planning



Multi-Agent design architecture and patterns

ARCHITECTURE

- Single agent + tools
- Supervisor agent + sub-agents (+ tools)
- Hierarchical agents
- Network
- Swarm

PATTERN

- Tool use
- Planning
- Reflection

Frameworks for implementing multi-agent apps

FRAMEWORKS

LangGraph

OpenAI Swarm

Agno (Phidata)

CrewAI

Autogen

LlamaIndex

UTILITIES / PROTOCOLS

MCP (model context protocol) - interface to external tools