



Anastasiia Chaikova
Denis Grachev
Kirill Gelvan

[MASTER]
Multi-Agent Sales-Tailored Expert Robot

EV Sales Expert Powered by AI

Goals

1. ~~Make revenue~~
2. Help the environment
3. Automate sales



Problems

1. Private data
2. Hallucinations
3. Ineffective pitching

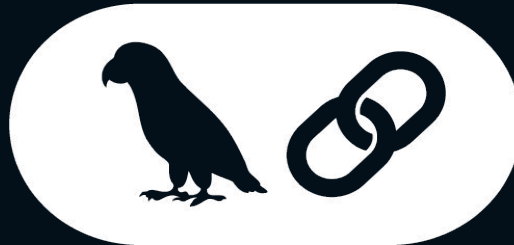
MASTER Approach

Technology

- Multi-agent conversation
- GPT-4-Turbo
- Mercedes Benz API
- LangChain, Streamlit

Data

- More than **100 car** configurations
- DE and US markets
- **9** principal customer **profiles**
- TOP sales books



arXiv

GTP-4-Turbo

1st place in LMSYS Chatbot Arena Leaderboard

Fast inference by API

Latest knowledge cutoff among leaders



Category

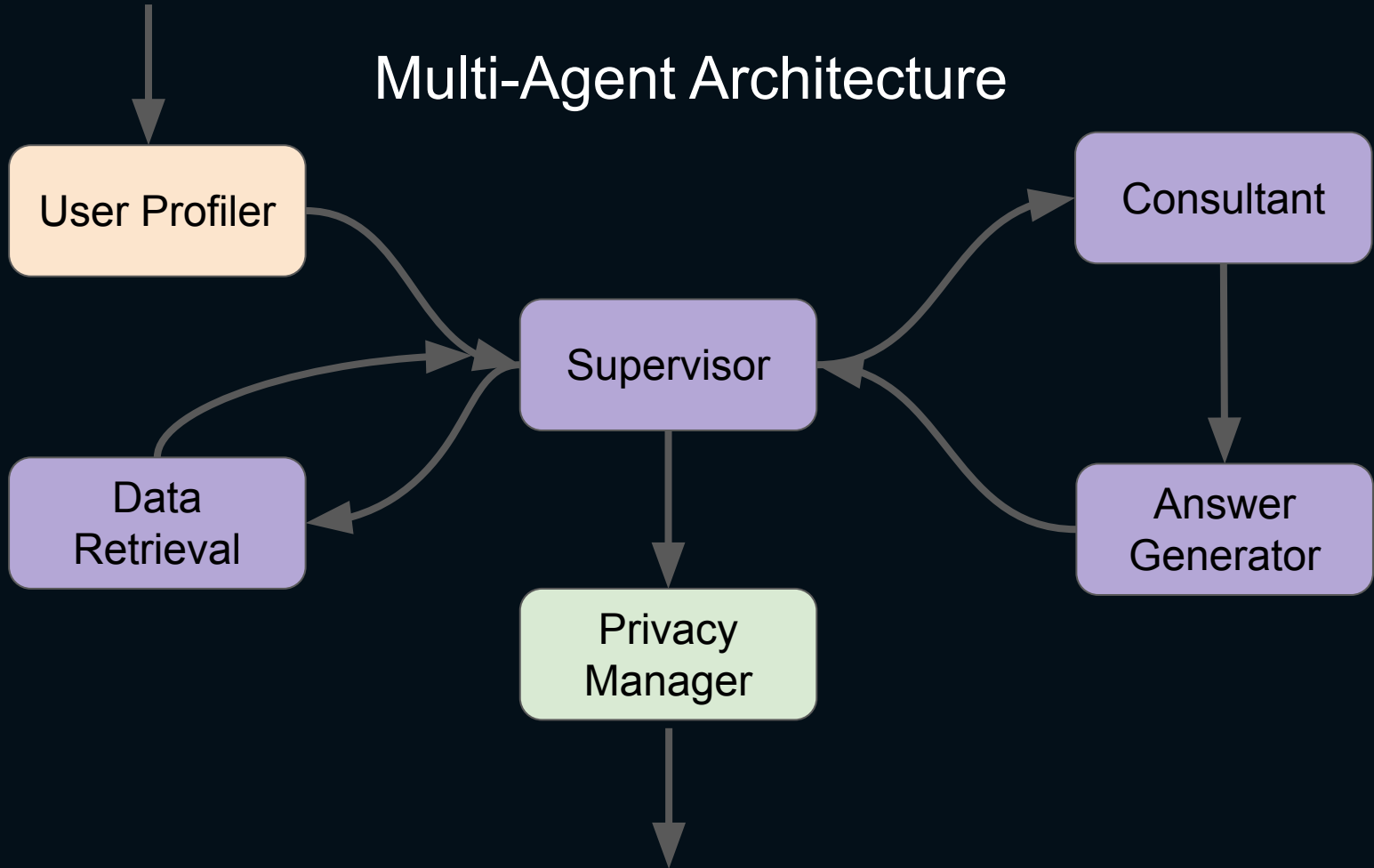
Overall

Overall Questions

#models: 91 (100%) #votes: 814,693 (100%)

Rank* (UB)	Model	★ Arena Elo	📊 95% CI	🗳 Votes	Organization	License	Knowledge Cutoff
1	GPT-4-Turbo-2024-04-09	1257	+4/-3	30562	OpenAI	Proprietary	2023/12
1	GPT-4-1106-preview	1253	+3/-3	69871	OpenAI	Proprietary	2023/4
2	Claude 3 Opus	1251	+3/-3	75684	Anthropic	Proprietary	2023/8
2	Gemini 1.5 Pro API-0409-Preview	1248	+4/-3	33723	Google	Proprietary	2023/11
3	GPT-4-0125-preview	1247	+2/-3	61924	OpenAI	Proprietary	2023/12

Multi-Agent Architecture



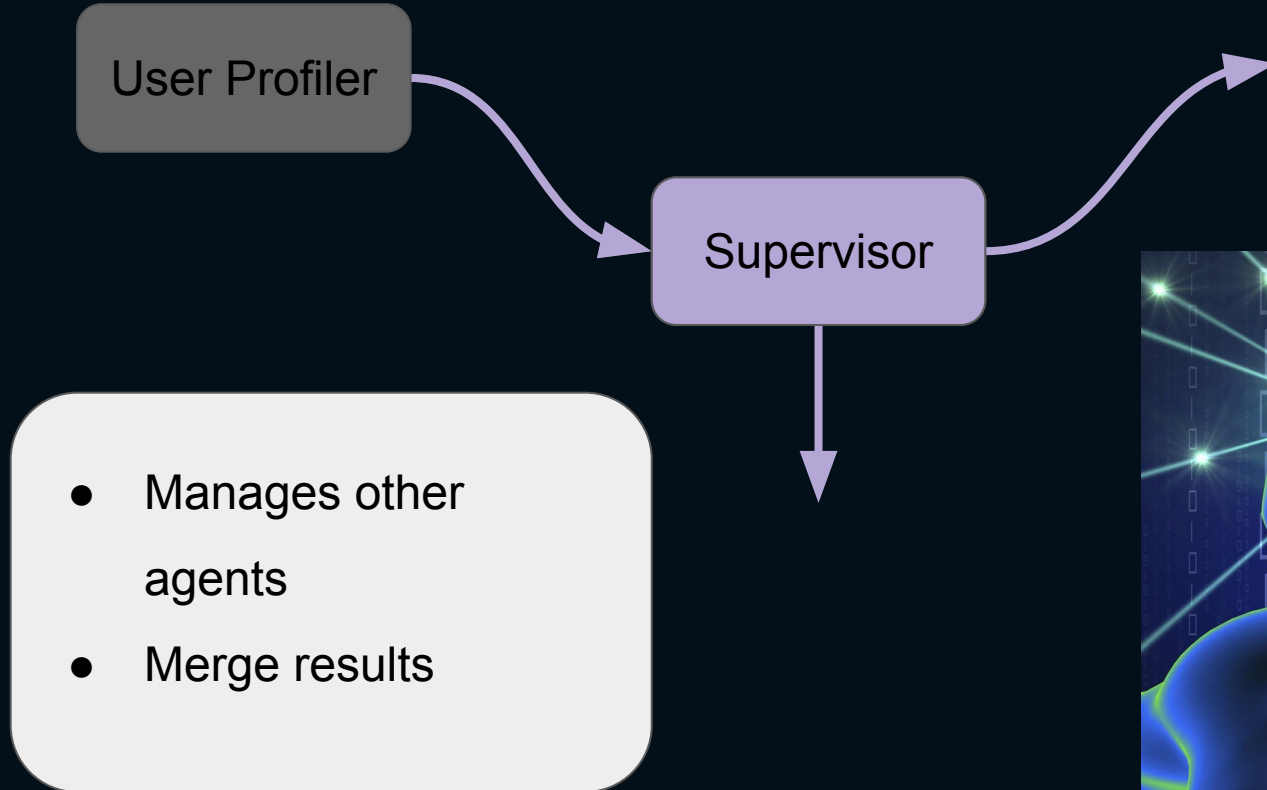
User Profiler

User Profiler

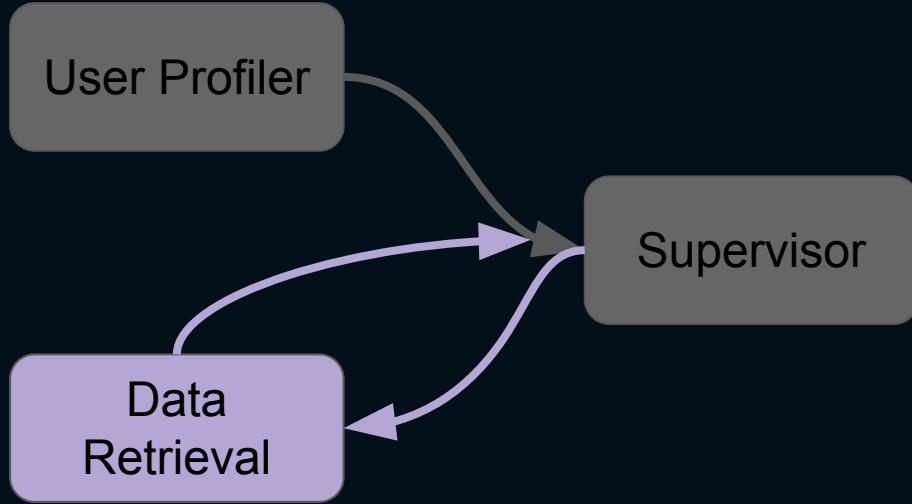
- 9 customer types
- Customize approach
- Dynamic typing



Supervisor – Cluster Manager



Retrieval Loop



- Receives request
- Creates appropriate query
- Returns summarized query result

Retrieval Loop



how does a c-klasse looks like?

```
---  
{'supervisor': {'next': 'retrieve_data_from_database'}}  
---
```

> Entering new AgentExecutor chain...

Invoking: `python_repl_ast` with `{'query': "df[df['class'] == 'C-Klasse'][['name', 'img_ext_url', 'img_int_url']]}"`

responded: To provide you with a picture of how a C-Klasse looks like, I will retrieve the image URLs of some C-Klasse models from the dataframe. Let's start by extracting the image URLs for the C-Klasse models in the dataframe.

	img_int_url	name	...
0	C 300 de mit EQ Hybrid Technologie	...	https://europe.starco
nnect-ce.i.mercedes-benz....			
1	C 300 de 4MATIC mit EQ Hybrid Technologie	...	https://europe.starco
nnect-ce.i.mercedes-benz....			
2	C 300 e mit EQ Hybrid Technologie	...	https://europe.starco
nnect-ce.i.mercedes-benz....			
3	C 300 e 4MATIC mit EQ Hybrid Technologie	...	https://europe.starco
nnect-ce.i.mercedes-benz....			

Retrieval Loop

📷 how does a c-klasse looks like?

📷 Certainly! Here's the revised message without any reference to the user's profile:

"To provide an image of a Mercedes-Benz C-Klasse, I can refer to the images available in the dataframe. Here are images for both the exterior and interior of a typical Mercedes-Benz C-Klasse model from the data you've provided:

- Exterior:



```
---  
{'supervisor': {'next': 'retrieve_data_from_database'}}  
---
```

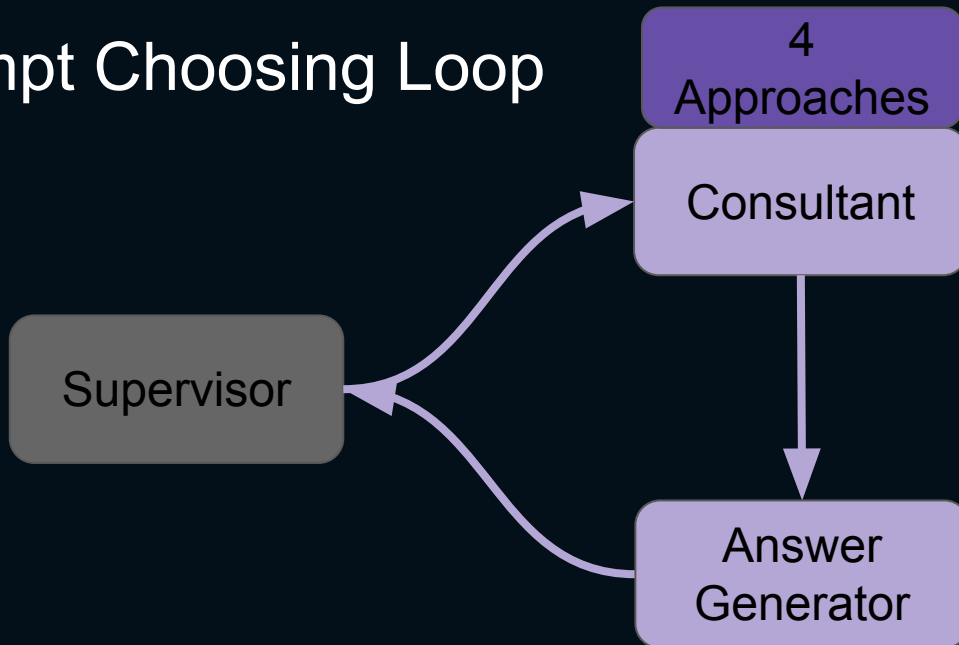
> Entering new AgentExecutor chain...

Invoking: `'python_repl_ast' with {'query': "df[df['class'] == 'C-Klasse'][['name', 'img_ext_url', 'img_int_url']]}"`
responded: To provide you with a picture of how a C-Klasse looks like, I will retrieve the image URLs of some C-Klasse models from the dataframe. Let's start by extracting the image URLs for the C-Klasse models in the dataframe.

	img_int_url	name	...
0	C 300 de mit EQ Hybrid Technologie	...	https://europe.starco-nnect-ce.i.mercedes-benz...
1	C 300 de 4MATIC mit EQ Hybrid Technologie	...	https://europe.starco-nnect-ce.i.mercedes-benz...
2	C 300 e mit EQ Hybrid Technologie	...	https://europe.starco-nnect-ce.i.mercedes-benz...
3	C 300 e 4MATIC mit EQ Hybrid Technologie	...	https://europe.starco-nnect-ce.i.mercedes-benz...

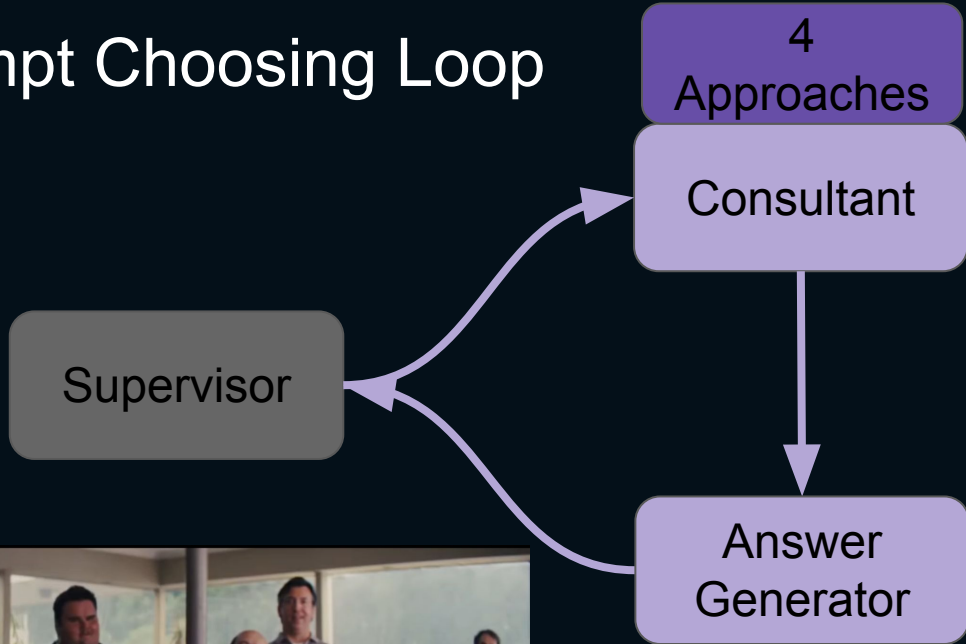
Prompt Choosing Loop

- Suggest EV
- Ask a question
- Convince for EV
- “Call-to-action”

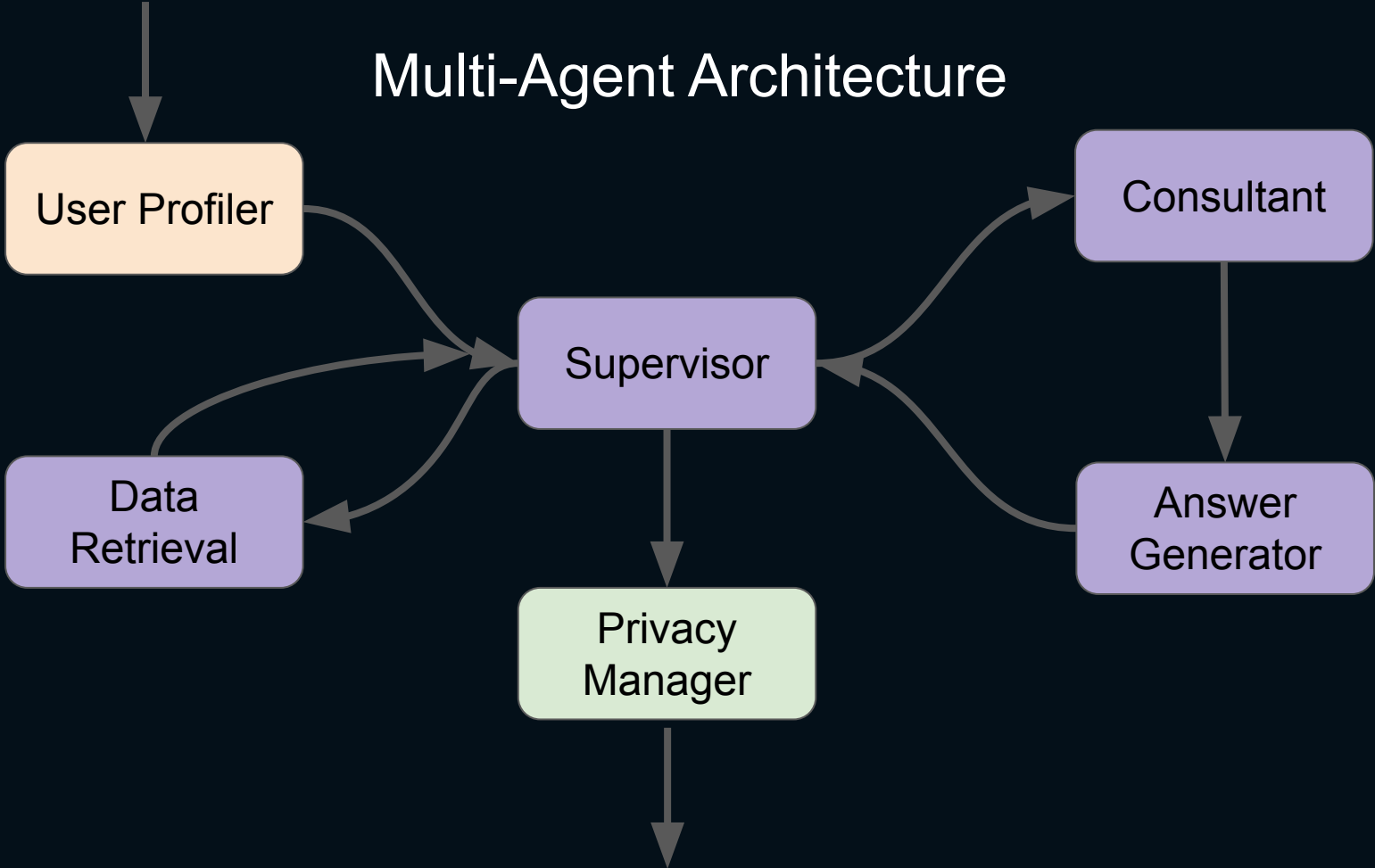


Prompt Choosing Loop

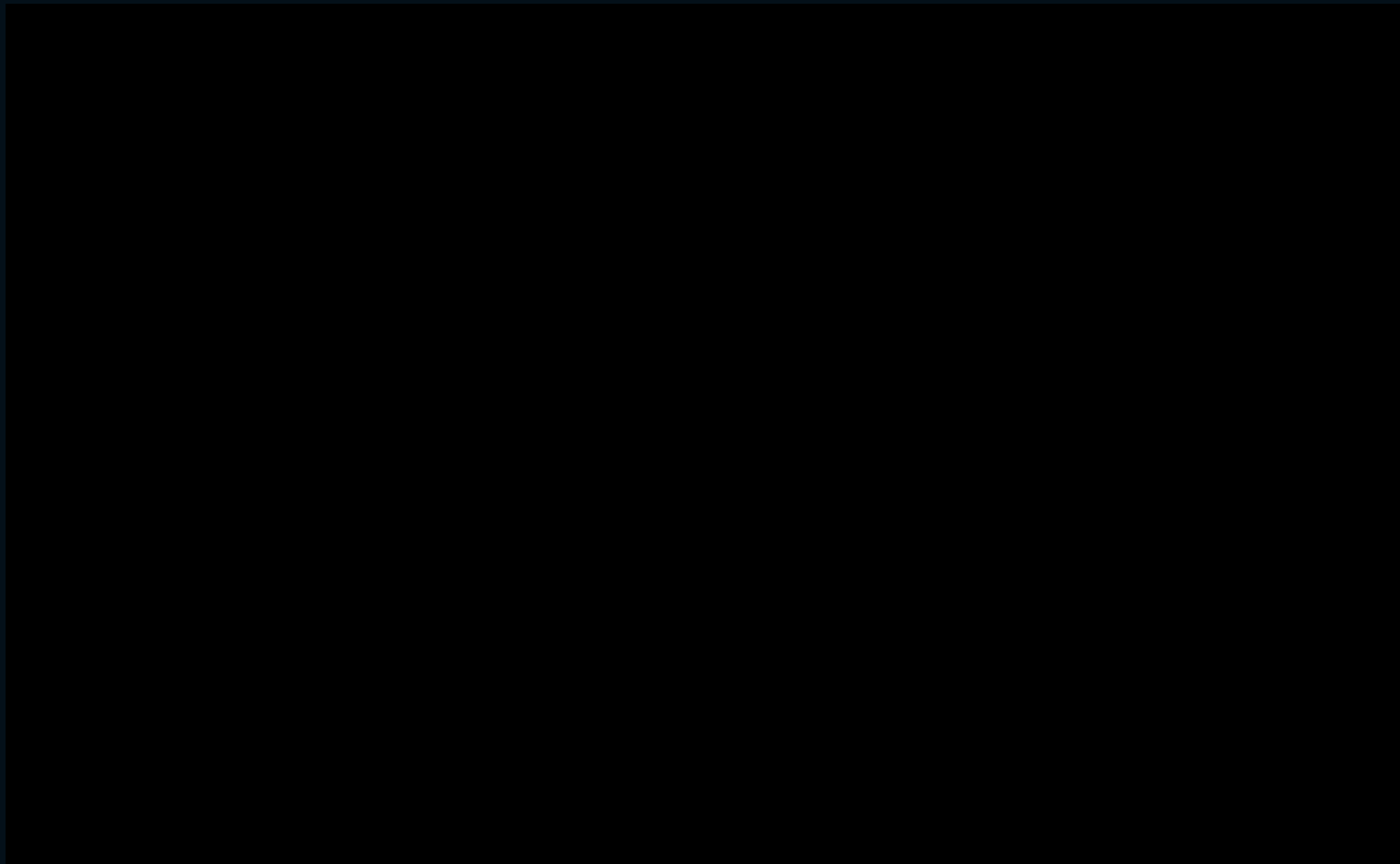
- Suggest EV
- Ask a question
- Convince for EV
- “Call-to-action”



Multi-Agent Architecture



Basic Example



More examples

MASTER



hi. im 28yo and making 125k/year before taxes. which car is the best for me?



Hello! Considering your situation, you might be interested in exploring a variety of models that align with your preferences and needs. Could you let me know what kind of features or car type you are interested in? Whether it's sporty performance, advanced technology, luxurious comfort, or sustainability, we have options that could cater to your interests.



I think I want the one I can use to drive for long distances + I have 3 kids



Great choice! For long-distance driving with a family, you might appreciate a vehicle that offers both comfort and space. Our SUV models, like the GLE or GLS, provide ample room for family and luggage, along with features that ensure a smooth and enjoyable ride. They also come equipped with advanced safety technologies to keep everyone secure on the road. Let me know if you'd like more details on these or any other models!



Compare 2 or 3 main SUV models for me

Future plans

Data

- Integrate more Mercedes data
- Provide guided sales techniques
- Include additional customer data

Technologies

- Additional prompt-tuning
- Add more agents
- Understand and utilize market trends

Thank you for your attention

Cause attention is all we need



[MASTER] Multi-Agent Sales-Tailored Expert Robot