

Министерская Конференция CFRR, 2025 г.

Разоблачение мифов об ИИ в финансовой отчетности

Элеонора Лауренца

18 марта 2025 г., отель Imperial Riding School, Вена, Австрия

CFRR»»

Centre for Financial and
Sustainability Reporting Reform



REPARIS
FOR SMEs

PULSAR




EAASURE

The CFRR Programs are co-funded by

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Swiss Confederation

Federal Department of Economic Affairs,
Education and Research EAER
State Secretariat for Economic Affairs SECO



European Union

Что такое искусственный интеллект?

Демис Хассабис



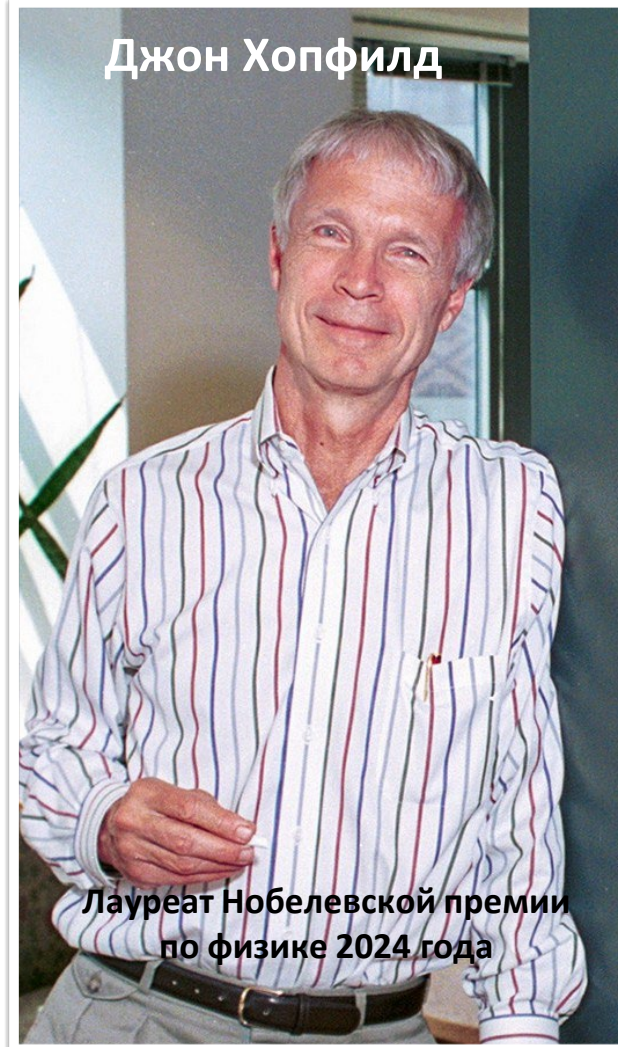
**Лауреат Нобелевской премии
по химии 2024 года**

Джефри Хинтон



**Лауреат Нобелевской премии
по физике 2024 года**

Джон Хопфилд



**Лауреат Нобелевской премии
по физике 2024 года**



Что такое искусственный интеллект?

Artificial Intelligence is a field of study

"AI is making machines do things that would require intelligence if done by humans."

"AI is understanding the nature of intelligence in machines...
...and, why not, in humans."

AI as a field
is relevant in multiple disciplines.

Nobel...

- will AI increase human productivity?
- will AI revolutionize science?
- will humans become smarter?
- will AI replace human in many jobs?
- ...
- will AI cause human extinction?

Technology is its application

AI Act (Regulation (EU) 2024/1689 art. 3

'AI system' means a machine-based system that is designed to operate with varying levels of autonomy and that may exhibit adaptiveness after deployment, and that, for explicit or implicit objectives, infers, from the input it receives, how to generate outputs such as predictions, content, recommendations, or decisions that can influence physical or virtual environments.

AI as a technology
is relevant in multiple domains.

Society...



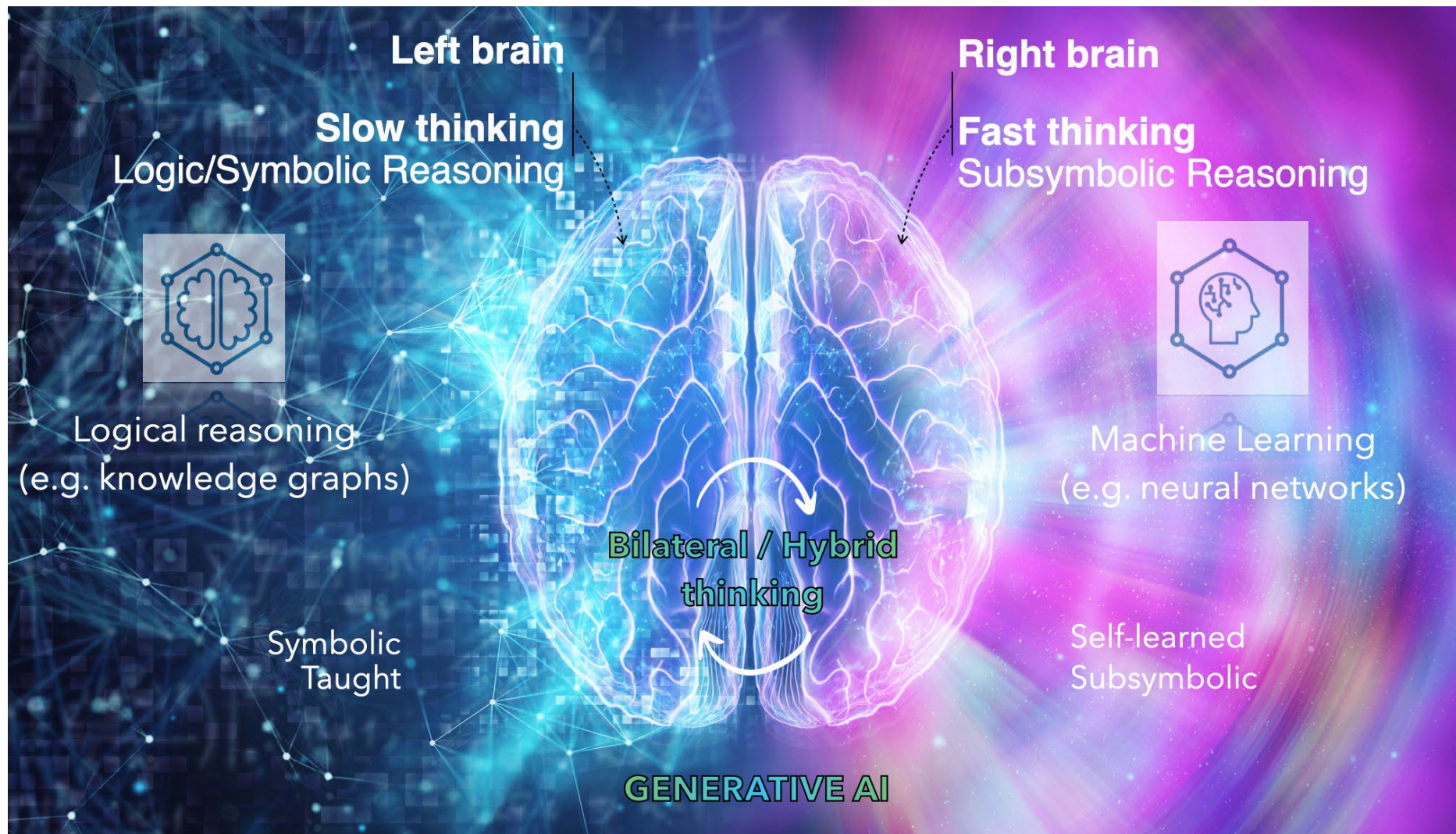


Что такое искусственный интеллект?





Что такое искусственный интеллект?





ЧИСТЫЙ ИНДУКТИВНЫЙ ИИ (БЫСТРОЕ МЫШЛЕНИЕ)



FORBES > BUSINESS

BREAKING

Lawyer Used ChatGPT In Court —And Cited Fake Cases. A Judge Is Considering Sanctions

Molly Bohannon Forbes Staff

Molly Bohannon has been a Forbes news reporter since 2023.

Updated Jun 8, 2023, 03:42pm EDT

TOPLINE The lawyer for a man suing an airline in a routine personal injury suit used ChatGPT to prepare a filing, but the artificial intelligence bot delivered fake cases that the attorney then presented to the court, prompting a judge to weigh sanctions as the legal community grapples with one of the first cases of AI “hallucinations” making it to court.

[СТАТЬЯ В
«ФОРБС»](#)



ЧИСТЫЙ ИНДУКТИВНЫЙ ИИ (БЫСТРОЕ МЫШЛЕНИЕ)



Учитывая, что MyCom владеет 51,07% акций "Società di Gestione BestBanca", а "Società di Gestione BestBanca" владеет 23,1% акций BestBanca, **изменился ли бы контроль над BestBanca**, если бы MyCom s.r.l. купил 30% акций BestBanca на рынке?



GPT4
Июнь 2024





ЧИСТЫЙ ИНДУКТИВНЫЙ ИИ (БЫСТРОЕ МЫШЛЕНИЕ)



Учитывая, что MyCom владеет 51,07% "Società di Gestione BestBanca", а "Società di Gestione BestBanca" владеет 23,1% акций BestBanca, **изменился ли бы контроль над BestBanca**, если бы MyCom s.r.l. купил 30% акций BestBanca на рынке?

(...) MyCom effectively controls approximately 11.85% (51.07% * 23.1%) of BestBanca's shares (...)

Now, if MyCom s.r.l. were to buy an additional 30% of BestBanca's shares from the market, it (...) could impact control:

1. Direct Ownership Increase: (...) its direct ownership stake in BestBanca would increase by 30%. *lack of reasoning*
2. Combined Ownership: MyCom s.r.l. would then own approximately 41.85% (11.85% + 30%) of BestBanca's shares (...). *lack of knowledge*
3. Potential for Majority Control: Depending on (...) structure (...) and (...) distribution of shares (...), MyCom s.r.l. could potentially achieve majority control of BestBanca with this increased ownership stake. *lack of common sense*
4. Voting Rights and Board Representation: With a majority ownership stake, MyCom s.r.l. would likely have significant influence (...). *lack of explanation*
5. Regulatory Considerations: (...)

lack of factuality

In summary, if MyCom s.r.l. were to buy 30% of BestBanca's shares from the market (...) it (...) **could potentially achieve** majority control of BestBanca (...)

lack of context

Horoscope answer!

GPT4
Июнь 2024







ЧИСТЫЙ ДЕДУКТИВНЫЙ ИИ (МЕДЛЕННОЕ МЫШЛЕНИЕ)

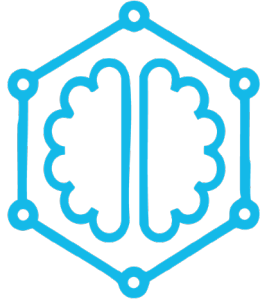


Table P

Person	Parent
Luigi	Giusto
Augusto	Giusto
Mario	Umberto
Sandra	Paola
Umberto	Vincenzo
Paola	Vincenzo
Enzo	Mario
Laura	Sandra

Who are the **pairs of persons** of the **same generation**?



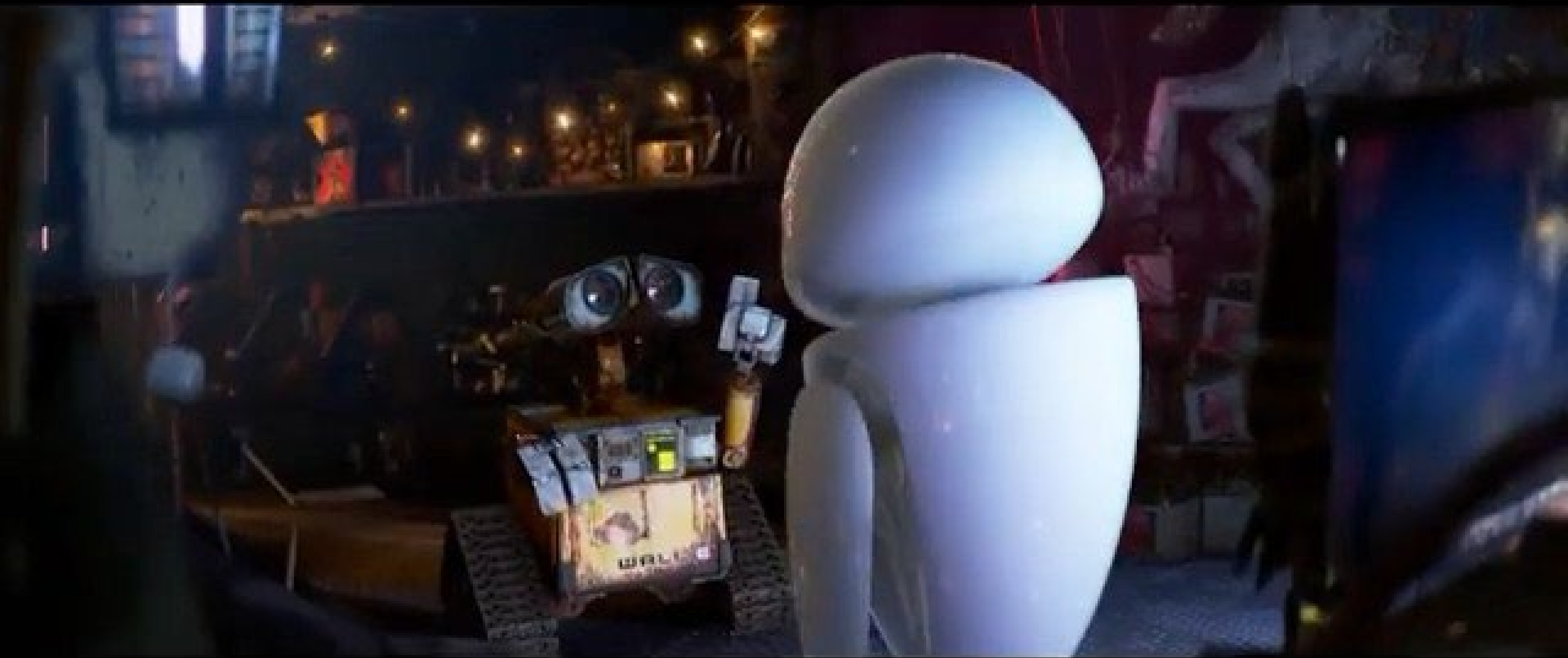
Person	Person
Luigi	Augusto
Umberto	Paola
Mario	Sandra
Enzo	Laura

Every person belongs to a generation

$$P(x) \Rightarrow \dots \\ \exists q G(x, q)$$

$$P(x, v), P(y, w), \\ G(v, z), G(w, z) \Rightarrow \\ \exists q G(x, q), G(y, q)$$

.....
If parents are in the same generation, children are in the same generation





ОБОСНОВАНИЕ ИСПОЛЬЗОВАНИЯ ГИБРИДНОГО ИИ В ФИНАНСОВОМ НАДЗОРЕ: KGROAR



ОБОСНОВАНИЕ ИСПОЛЬЗОВАНИЯ ИИ В ФИНАНСОВОМ НАДЗОРЕ



запросы финансового надзора

разные форматы
разные **структуры**
разное содержание
разные **цели**
разные источники
разные
нормативные
документы

Кто имеет **контроль** над компанией?
Кто конечное контролирующее лицо?
Кто имеет **значимое влияние**?
Какие есть прямые связи?

Законно ли приобретение определенной доли?
Законна ли операция слияния или поглощения?
Соответствует ли требованиям данный представитель компании?
...

решения финансового надзора



Нулевой уровень
задача

получение информации



1й уровень
аналитик

прием задачи
эксперты по данным

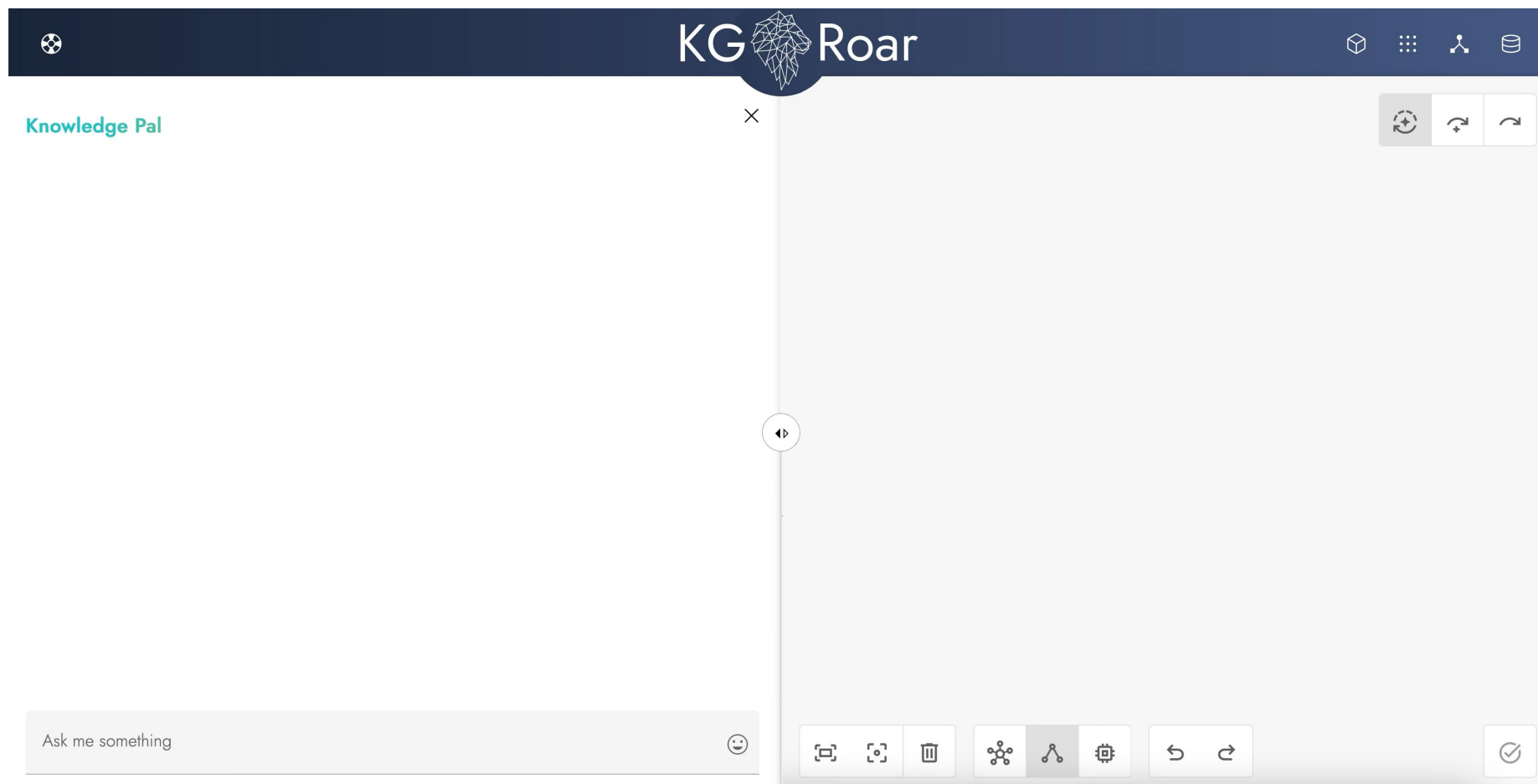
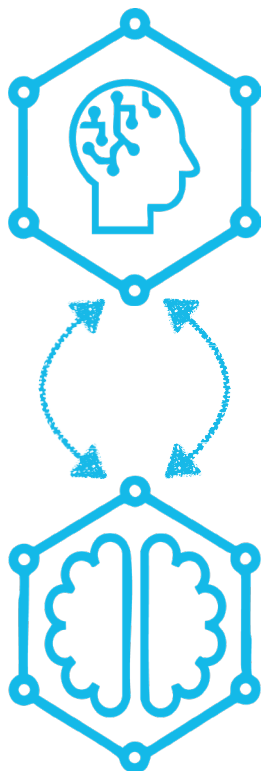


2й уровень
аналитик

Обработка задачи (основной вид деятельности)

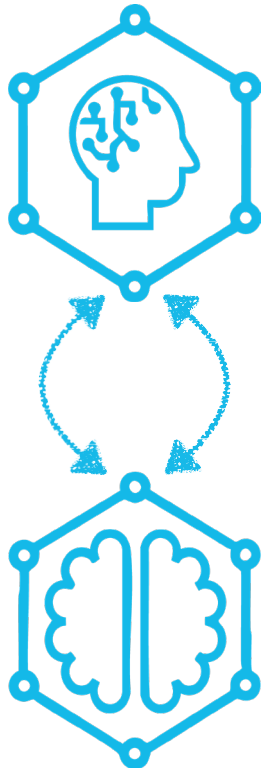


Гибридный ИИ в финансовом надзоре: KG ROAR





Гибридный ИИ в финансовом надзоре: KG ROAR



KG Roar

Knowledge Pal

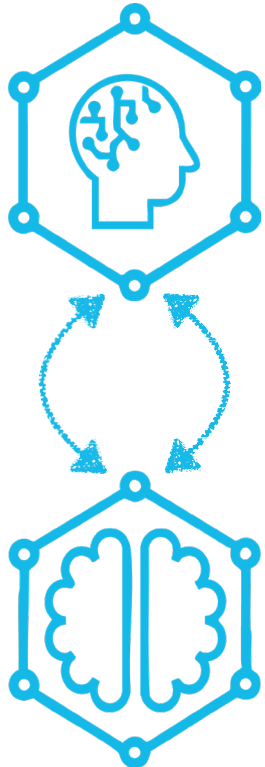
Explain the control of Darrows over DunkelMeier

controls(Darrows,Dunke1Meier)

Ask me something



Гибридный ИИ в финансовом надзоре: KG ROAR



KG Roar
🏠 ⋮ 👤 📄

Knowledge Pal Explain the control of Darrows over DunkelMeier

controls(Darrows, DunkelMeier)

Darrows owns 78% of the shares in Sverigsbank, giving it control over the company. Through its control of Sverigsbank, Darrows indirectly controls 27.8% of CreditoNazionale shares and 67.8% of EchoLine shares. Darrows also owns 100% of the shares in Vesta, giving it control over this company as well. Through its control of Vesta, Darrows indirectly controls 19.8% of GTHolding shares. Darrows controls EchoLine, which owns 37.7% of GTHolding shares. Combining this with the shares controlled via Vesta, Darrows controls a total of 57.5% of GTHolding shares, giving it control over this company. Through its control of GTHolding, Darrows indirectly controls an additional 25.1% of CreditoNazionale shares. Combining this with the shares controlled via Sverigsbank, Darrows controls a total of 52.9% of CreditoNazionale shares, giving it control over this company. Darrows also controls 6.2% of Lausebga shares through GTHolding and 45% through CreditoNazionale, giving it control over 51.2% of Lausebga shares and thus control over the company. Through its control of CreditoNazionale, Darrows indirectly controls 38.7% of DunkelMeier shares. Through Lausebga, it controls an additional 30% of DunkelMeier shares. In total, Darrows controls 68.7% of DunkelMeier shares, giving it control over this company.

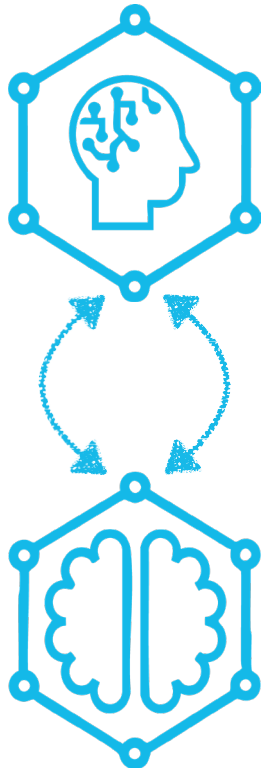
Ask me something 😊

```

graph TD
    Darrows -- 0.780 --> Sverigsbank
    Darrows -- 1.000 --> Vesta
    Sverigsbank -- 0.278 --> EchoLine
    Sverigsbank -- 0.678 --> EchoLine
    Vesta -- 0.198 --> GTHolding
    EchoLine -- 0.377 --> GTHolding
    GTHolding -- 0.251 --> CreditoNazionale
    Sverigsbank -- 0.529 --> CreditoNazionale
    GTHolding -- 0.062 --> Lausebga
    CreditoNazionale -- 0.450 --> Lausebga
    CreditoNazionale -- 0.387 --> DunkelMeier
    Lausebga -- 0.300 --> DunkelMeier
    DunkelMeier -- 0.687 --> DunkelMeier
  
```




Гибридный ИИ в финансовом надзоре: KG ROAR



KG Roar
🏠 ⋮ 👤 📄

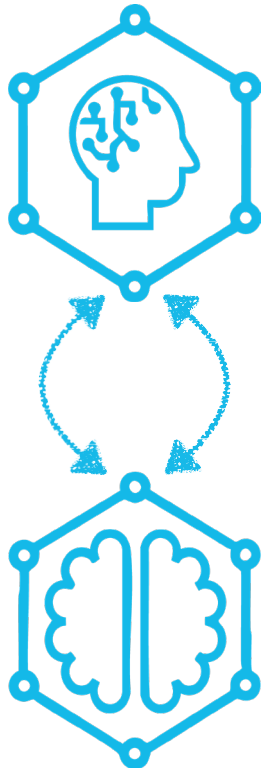
Darrows owns 78% of the shares in **Sverigsbank**, giving it control over the company. Through its control of **Sverigsbank**, **Darrows** indirectly controls 27.8% of **CreditoNazionale** shares and 67.8% of **EchoLine** shares. **Darrows** also owns 100% of the shares in **Vesta**, giving it control over this company as well. Through its control of **Vesta**, **Darrows** indirectly controls 19.8% of **GTHolding** shares. **Darrows** controls **EchoLine**, which owns 37.7% of **GTHolding** shares. Combining this with the shares controlled via **Vesta**, **Darrows** controls a total of 57.5% of **GTHolding** shares, giving it control over this company. Through its control of **GTHolding**, **Darrows** indirectly controls an additional 25.1% of **CreditoNazionale** shares. Combining this with the shares controlled via **Sverigsbank**, **Darrows** controls a total of 52.9% of **CreditoNazionale** shares, giving it control over this company. **Darrows** also controls 6.2% of **Lausebga** shares through **GTHolding** and 45% through **CreditoNazionale**, giving it control over 51.2% of **Lausebga** shares and thus control over the company. Through its control of **CreditoNazionale**, **Darrows** indirectly controls 38.7% of **DunkelMeier** shares. Through **Lausebga**, it controls an additional 30% of **DunkelMeier** shares. In total, **Darrows** controls 68.7% of **DunkelMeier** shares, giving it control over this company.

Is DunkelMeier in close link with IberianBank?

Ask me something 😊



Гибридный ИИ в финансовом надзоре: KG ROAR



KG Roar

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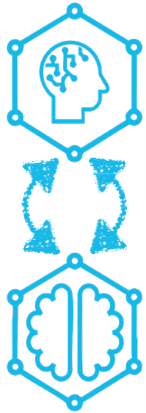
Is DunkelMeier in close link with IberianBank?
 ... close_link(DunkelMeier, IberianBank)

CerberusCapitalM... owns a significant portion of both **DunkelMeier** and **IberianBank** shares, with ownership percentages of 20.68% and 20.18% respectively. As such, **DunkelMeier** and **IberianBank** are considered to have a close link relationship.

Ask me something



Гибридный ИИ в финансовом надзоре: KG ROAR



KG Roar

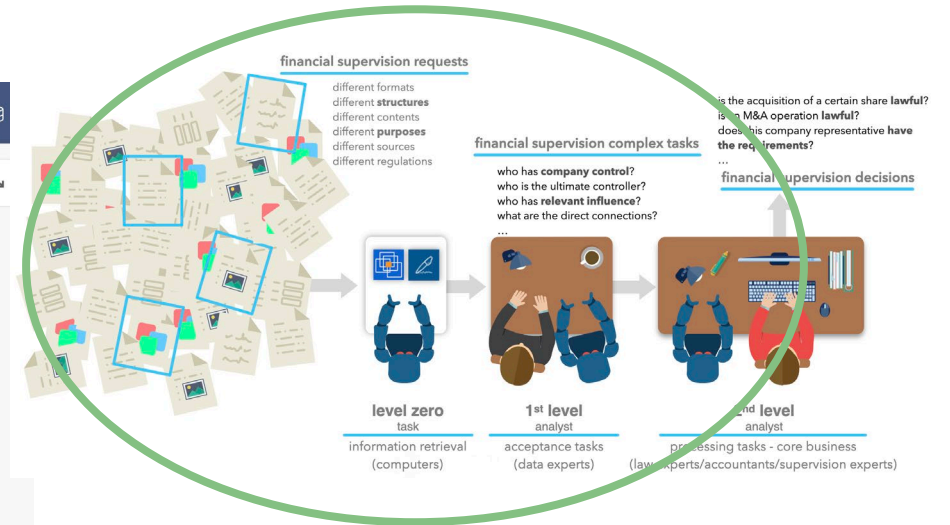
... shares, giving it control over this company. Through its control of **GTHolding**, **Darrows** indirectly controls an additional 25.1% of **CreditoNazionale** shares. Combining this with the shares controlled via **Sverigsbank**, **Darrows** controls a total of 52.9% of **CreditoNazionale** shares, giving it control over this company. **Darrows** also controls 6.2% of **Lausebga** shares through **GTHolding** and 45% through **CreditoNazionale**, giving it control over 51.2% of **Lausebga** shares and thus control over the company. Through its control of **CreditoNazionale**, **Darrows** indirectly controls 38.7% of **DunkelMeier** shares. Through **Lausebga**, it controls an additional 30% of **DunkelMeier** shares. In total, **Darrows** controls 68.7% of **DunkelMeier** shares, giving it control over this company.

Is DunkelMeier in close link with IberianBank?

```
*** close_link(DunkelMeier, IberianBank)
```

CerberusCapitalM... owns a significant portion of both **DunkelMeier** and **IberianBank** shares, with ownership percentages of 20.68% and 20.18% respectively. As such, **DunkelMeier** and **IberianBank** are considered to have a close link relationship.

Ask me something



ССЫЛКИ:

[“KG-Roar: Interactive Datalog-Based Reasoning on Virtual Knowledge Graphs.”](#)
 Bellomarini, Luigi ; Benedetti, Marco ; Gentili, Andrea ; Magnanimi, Davide ; Sallinger, Emanuel
 Proceedings of the VLDB Endowment, vol. 16, no. 12, 2023, pp. 4014–17.

[“Data Science with Vadalog: Knowledge Graphs with Machine Learning and Reasoning in Practice.”](#)
 Bellomarini, Luigi ; Fayzrakhmanov, Ruslan R. ; Gottlob, Georg ; Kravchenko, Andrey ;
 Laurenza, Eleonora ; Nenov, Yavor ; Reissfelder, Stéphane ; Sallinger, Emanuel ;
 Sherkhonov, Evgeny ; Vahdati, Sahar ; Wu, Lianlong
 Future Generation Computer Systems, vol. 129, 2022, pp. 407–22.

[“Vadalog: A Modern Architecture for Automated Reasoning with Large Knowledge Graphs.”](#)
 Bellomarini, Luigi, Benedetto, Davide ; Gottlob, Georg ; Sallinger, Emanuel
 Information Systems (Oxford), vol. 105, 2022,.



ТЕМАТИЧЕСКОЕ ИССЛЕДОВАНИЕ ПО ГИБРИДНОМУ ИИ В БУХУХЕТЕ И ОТЧЕТНОСТИ: FINREP



БУХУЧЕТ И ОТЧЕТНОСТЬ: FINREP

Директива 2013/36/EC - CRS IV

Регламент (EC) 575/2013

Регламент (EC) 2021/451

Регламент (EC) 2024/3117

МСБУ – IFRIC – МСФО

Система отчетности Европейского

банковского управления (EBA)

Внедрение технических

стандартов

Приложение V



ANNEX V

INSTRUCTIONS FOR REPORTING ON FINANCIAL INFORMATION

		balance sheet items	
0240	Tax liabilities		IAS 1.54(n-o)
0250	Current tax liabilities		IAS 1.54(n); IAS 12.5
0260	Deferred tax liabilities	Accounting Directive art 17(1)(f); CRR art 4(1)(108)	IAS 1.54(o); IAS 12.5; CRR art 4(1)(108)
0270	Share capital repayable on demand		IAS 32 IE 33; IFRIC 2; Annex V.Part 2.12
0280	Other liabilities	Annex V.Part 2.13	Annex V.Part 2.13
0290	Liabilities included in disposal groups classified as held for sale		IAS 1.54 (p); IFRS 5.38, Annex V.Part 2.14
0295	Haircuts for trading liabilities at fair value	Annex V Part 1.29	
0300	TOTAL LIABILITIES		IAS 1.9(b);IG 6

57. **Share capital repayable on demand** shall include the capital instruments issued by the institution that do not meet the criteria to be classified in equity. Institutions shall include in this item the cooperative shares that do not meet the criteria to be classified in equity.

0230	Other provisions	V.Part 2.11
0240	Tax liabilities	IAS 37.14
0250	Current tax liabilities	IAS 1.54(n-o)
0260	Deferred tax liabilities	IAS 1.54(o); IAS 12.5
0270	Share capital repayable on demand	IAS 32 IE 33; IFRIC 2; Annex V.Part 2.12
0280	Other liabilities	Annex V.Part 2.13
0290	Liabilities included in disposal groups classified as held for sale	IAS 1.54 (p); IFRS 5.38, Annex V.Part 2.14
0300	TOTAL LIABILITIES	IAS 1.9(b);IG 6





БУХУЧЕТ И ОТЧЕТНОСТЬ: FINREP

OJ L, 27.12.2024 Official Journal of the European Union EN 1 series 27.12.2024

1. Balance Sheet Statement (Statement of Financial)

COMMISSION IMPLEMENTING REGULATION (EU) 2024/3117
of 29 November 2024
laying down implementing technical standards for the application of Regulation (EU) No 575/2013 of the European Parliament and of the Council with regard to supervisory reporting of institutions and repealing Commission Implementing Regulation (EU) 2021/451
(Text with EEA relevance)

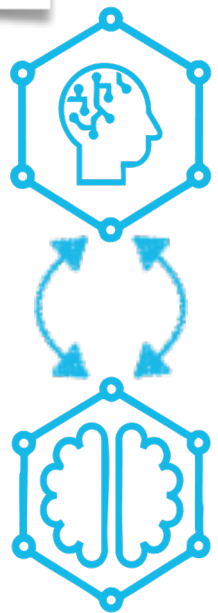
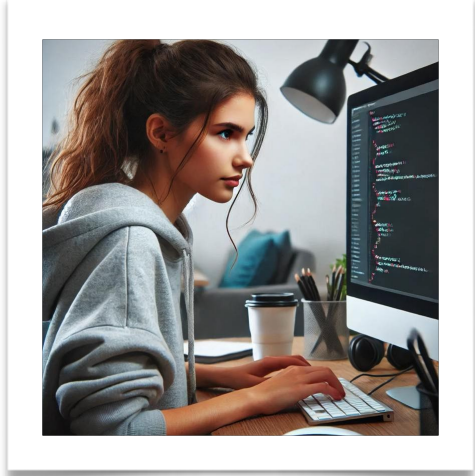
1.2 Liabilities

European Banking Authority		ANNEX V INSTRUCTIONS FOR REPORTING ON FINANCIAL INFORMATION	
Code	Description	Reference	IS
0001	0001 Tax liabilities	ECB/2013/33 Annex 2, Part 1	1
0002	0002 Current tax liabilities	IAS 12	1
0003	0003 Deferred tax liabilities	IAS 12	1
0004	0004 Share capital repayable on demand	IAS 32	1
0005	0005 Other liabilities	IAS 32	1
0006	0006 Liabilities included in disposal group class	IAS 32	1
0007	0007 Liabilities for trading liabilities at fair value	IAS 32	1
0008	0008 TOTAL LIABILITIES	IAS 32	1

57. 'Share capital repayable on demand' shall include the capital instruments issued by the institution that do not meet the criteria to be classified in equity. Institutions shall include in this item the cooperative shares that do not meet the criteria to be classified in equity



DIRECTIVES
DIRECTIVE 2013/36/EU OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL
of 26 June 2013
on access to the activity of credit institutions and the prudential supervision of credit institutions and investment firms, amending Directive 2006/48/EC and repealing Directive 2006/49/EC



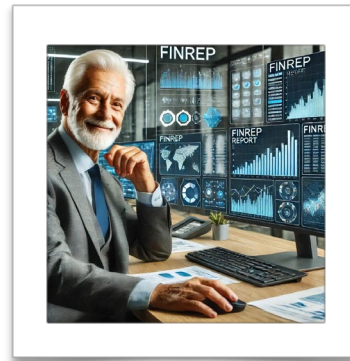
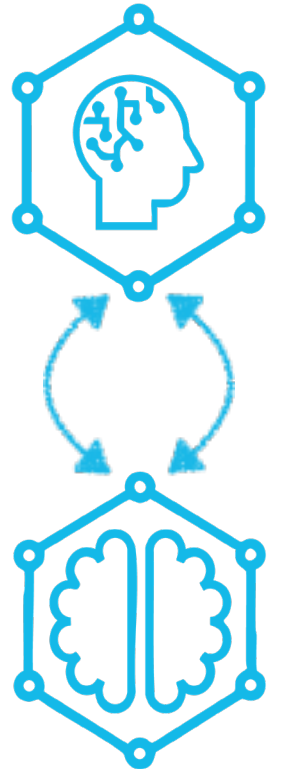
ГИБРИДНЫЙ ИИ В БУХУЧЕТЕ И ОТЧЕТНОСТИ: FINREP

Акционерный капитал, погашаемый по требованию

Двухсторонний ИИ, пожалуйста, прочитай всю документацию и дай мне решение, соответствующее FINREP, относительно концепции «акционерный капитал, погашаемый по требованию»

Акционерный Капитал Погашаемый По Требованию (x) :-
Инструмент Капитала (x), Выпуск (x), \neg
Собственный Капитал (x).

Акционерный Капитал Погашаемый По Требованию (x) :- Кооперативная Доля (x), \neg
Собственный Капитал (x).

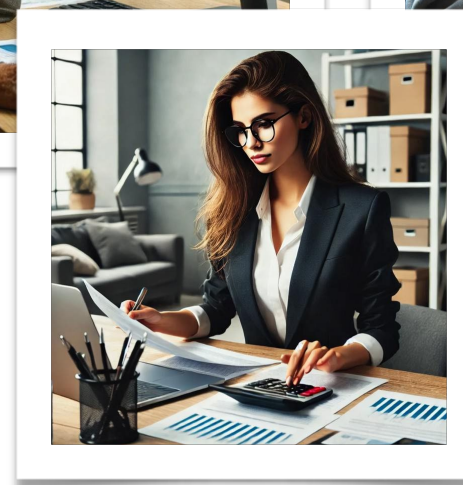
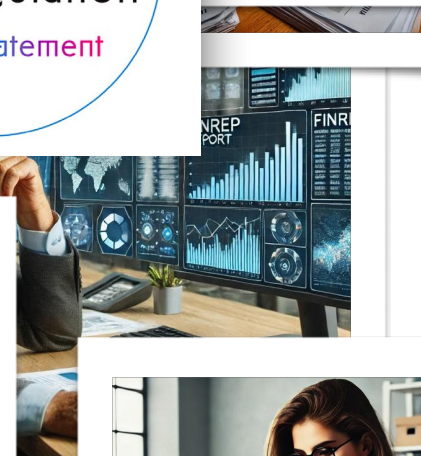
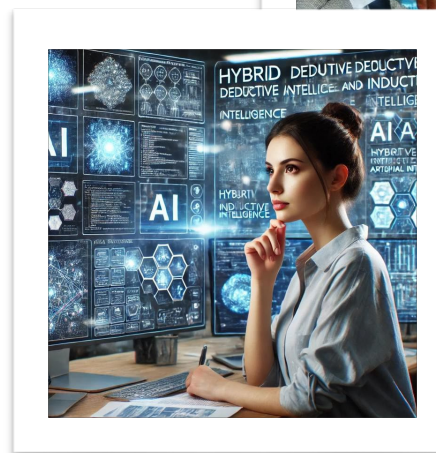




ГИБРИДНЫЙ ИИ В БУХУЧЕТЕ И ОТЧЕТНОСТИ

РЕЗУЛЬТАТЫ ГИБРИДНОГО ИИ

- подход квазиулевого кодирования
- объясняемость по проекту
- проверяемость
- управление рисками гармонизации
- инклюзивность
- оператор в контуре управления
- фактичность
- чатбот/поиск данных или задачи реального мира
- экономическая эффективность
- масштабируемость
- гибкость в отношении изменений





СПАСИБО ЗА ВНИМАНИЕ



Knowledge Graph Lab



BANCA D'ITALIA
EUROSISTEMA