

Ministarska konferencija CFRR-a 2025.

Razotkrivanje UI-ja u financijskom izvještavanju

Eleonora Laurenza

18. ožujka/mart 2025., Hotel Imperial Riding School, Beč, Austrija

CFRR»»

Centre for Financial and
Sustainability Reporting Reform



REPARIS
FOR SMEs

PULSAR



EAASURE

The CFRR Programs are co-funded by

 Federal Ministry
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Finance

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Cooperation

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



European Union

ŠTO JE UMJETNA INTELIGENCIJA?

Demis Hassabis



Nobelova nagrada za kemiju u 2024.

Fotografija: Duncan Hull, CC BY-SA 4.0

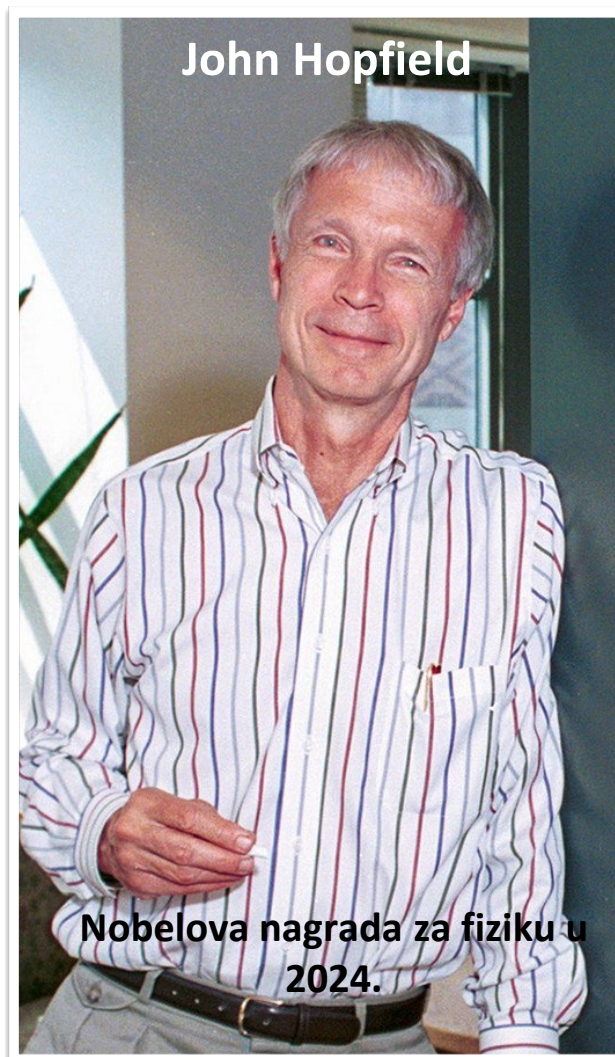
Geoffrey Hinton



**Nobelova nagrada za fiziku u
2024.**

Fotografija: Chloe Ellingson/The New York Times

John Hopfield



**Nobelova nagrada za fiziku u
2024.**

Fotografija: Princeton University/Sveučilište Princeton



ŠTO JE UMJETNA INTELIGENCIJA?

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

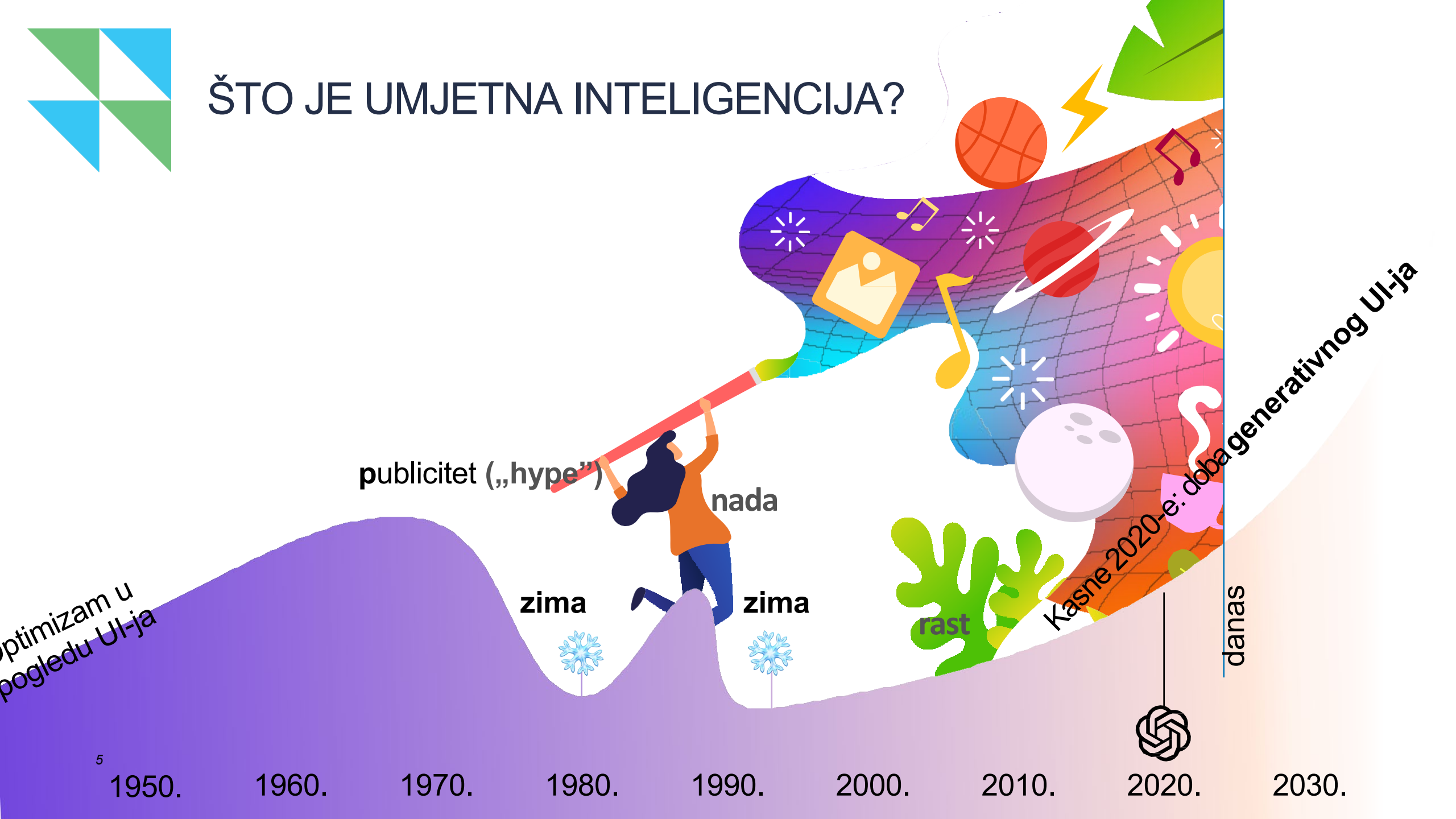
'AI system' means a machine-based system that is designed to operate with varying levels of autonomy and that may exhibit adaptiveness after deployment, and that, for explicit or implicit objectives, infers, from the input it receives, how to generate outputs such as predictions, content, recommendations,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

AI as a technology
is relevant in multiple domains.

Society...

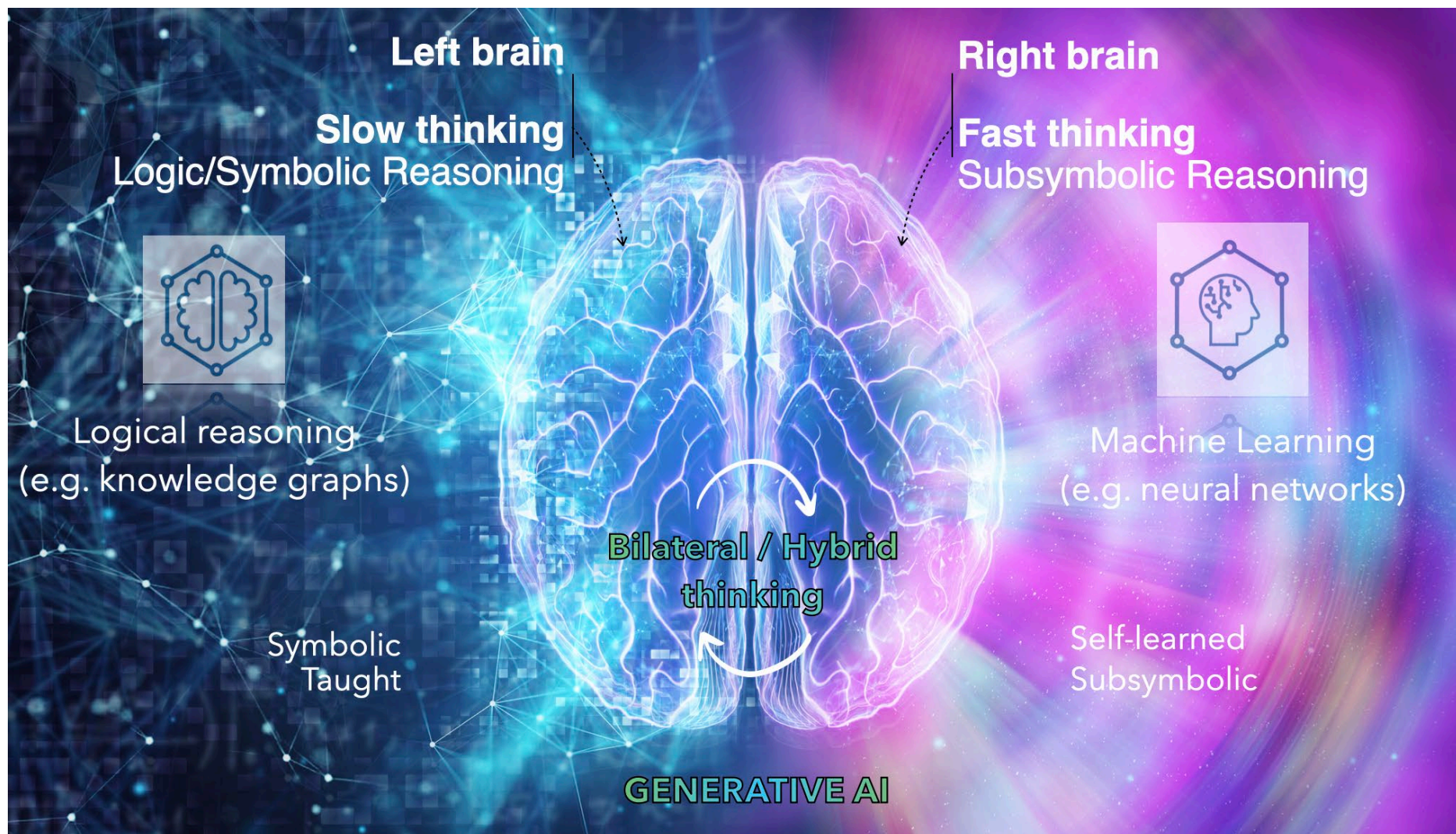


ŠTO JE UMJETNA INTELIGENCIJA?





ŠTO JE UMJETNA INTELIGENCIJA?





ČISTI INDUKTIVNI UI (BRZO RAZMIŠLJANJE)



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.

[ČLANAK U
FORBES-u](#)



ČISTI INDUKTIVNI UI (BRZO RAZMIŠLJANJE)



S obzirom na to da MyCom posjeduje 51,07 posto „Società di Gestione BestBance”, a „Società di Gestione BestBanca” posjeduje the 23,1 posto dionica BestBance, **hoće li se kontrola nad BestBancom promijeniti** ako MyCom d.o.o. kupi 30 posto dionica BestBance na tržištu?



GPT4

Lipanj/jun 2024.



(...) 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%.
2. Combined Ownership: MyCom s.r.l. would then own approximately 41.85% (11.85% + 30%) of BestBanca's shares (...)
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.
4. Voting Rights and Board Representation: With a majority ownership stake, MyCom s.r.l. would likely have significant influence (...)
5. Regulatory Considerations: (...)

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 knowledge

lack of factuality

lack of context

lack of reasoning

lack of common sense

lack of explanation

Horoscope answer!





ČISTI DEDUKTIVNI UI (SPORO RAZMIŠLJANJE)



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**?



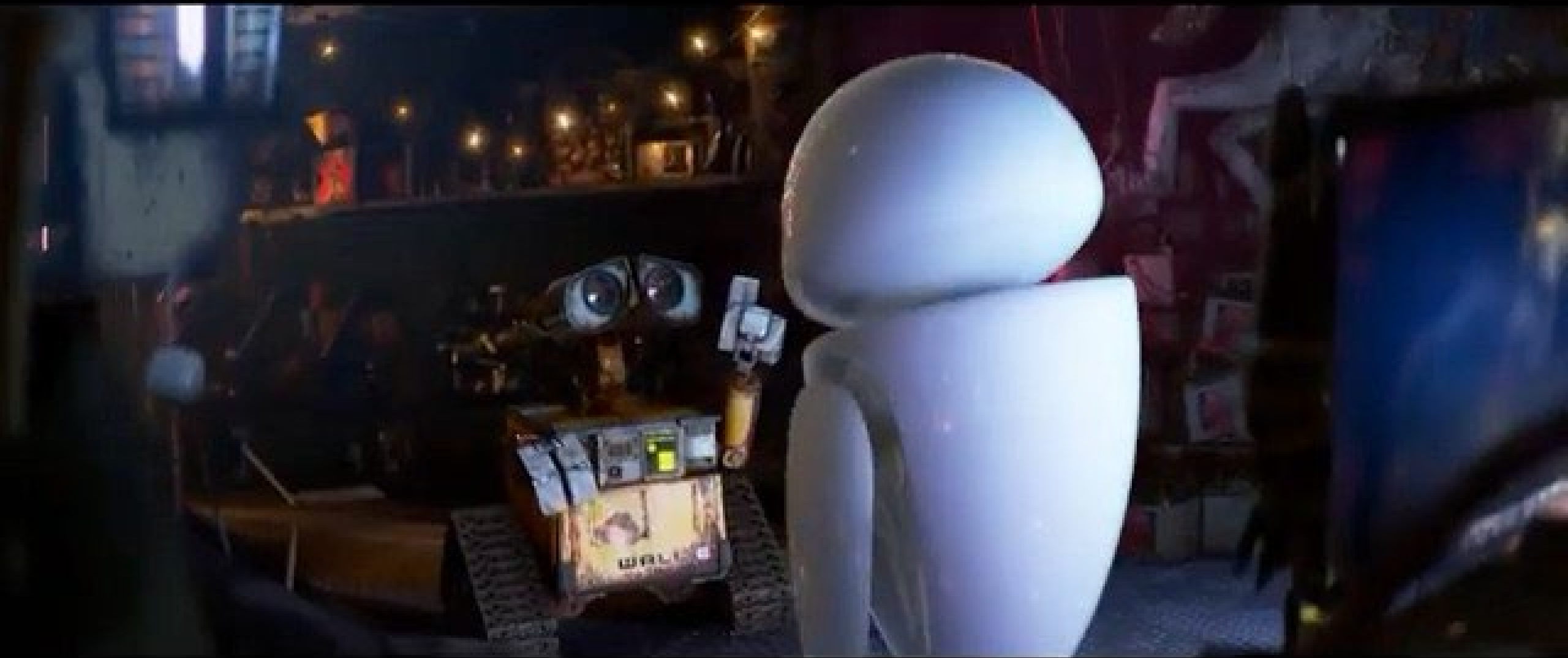
Every person
belongs to a
generation

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

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

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

Person	Person
Luigi	Augusto
Umberto	Paola
Mario	Sandra
Enzo	Laura





POSLOVNI SLUČAJ ZA HIBRIDNI UI U FINANCIJSKOJ SUPERVIZIJI: KGROAR



POSLOVNI SLUČAJ U FINANCIJSKOJ SUPERVIZIJI



zahtjevi za financijsku superviziju

različiti formati
različite **strukture**
različiti sadržaji
različite **namjene**
različiti izvori
različiti propisi

kompleksni zadaci financijske supervizije

tko ima kontrolu nad
poduzećem?
tko ima konačnu kontrolu?
tko ima **mjerodavan utjecaj?**
koje su direktne veze?

je li stjecanje određenog udjela **zakonito?**
je li operacija spajanja i preuzimanja
zakonita?
ima li predstavnik ovog poduzeća
zahtjeve?

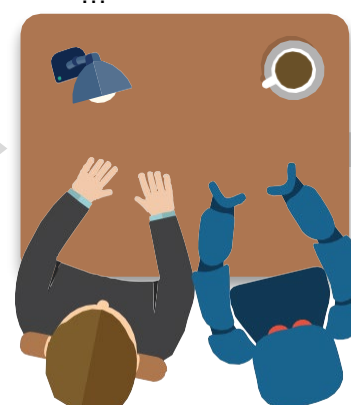
...

odluke financijske supervizije



zadatak **nulte**
razine

pronalaženje informacija
(kompjuteri)



analitičar **prve**
razine

prihvatanje zadatka
(podatkovni stručnjaci)

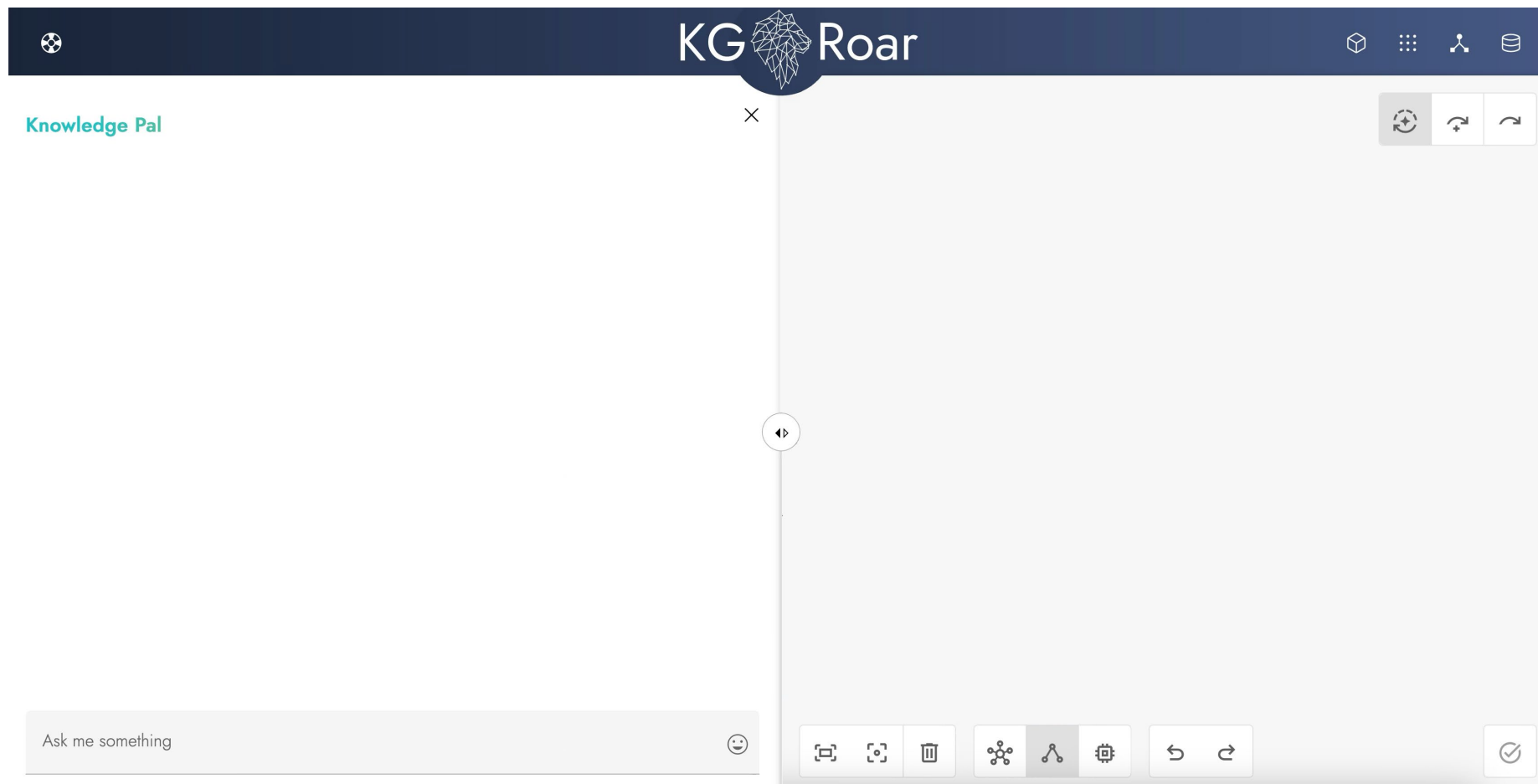
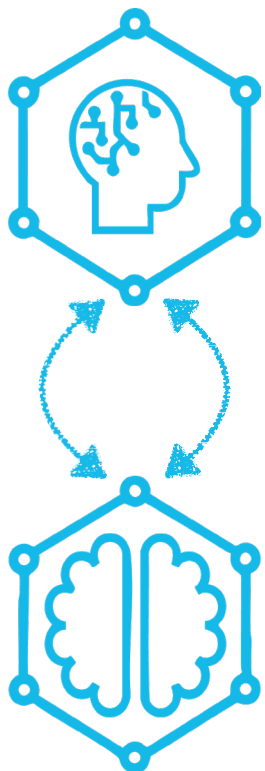


analitičar **druge**
razine

obrada zadatka – osnovna djelatnost
(pravni stručnjaci/računovođe/stručnjaci za superviziju)

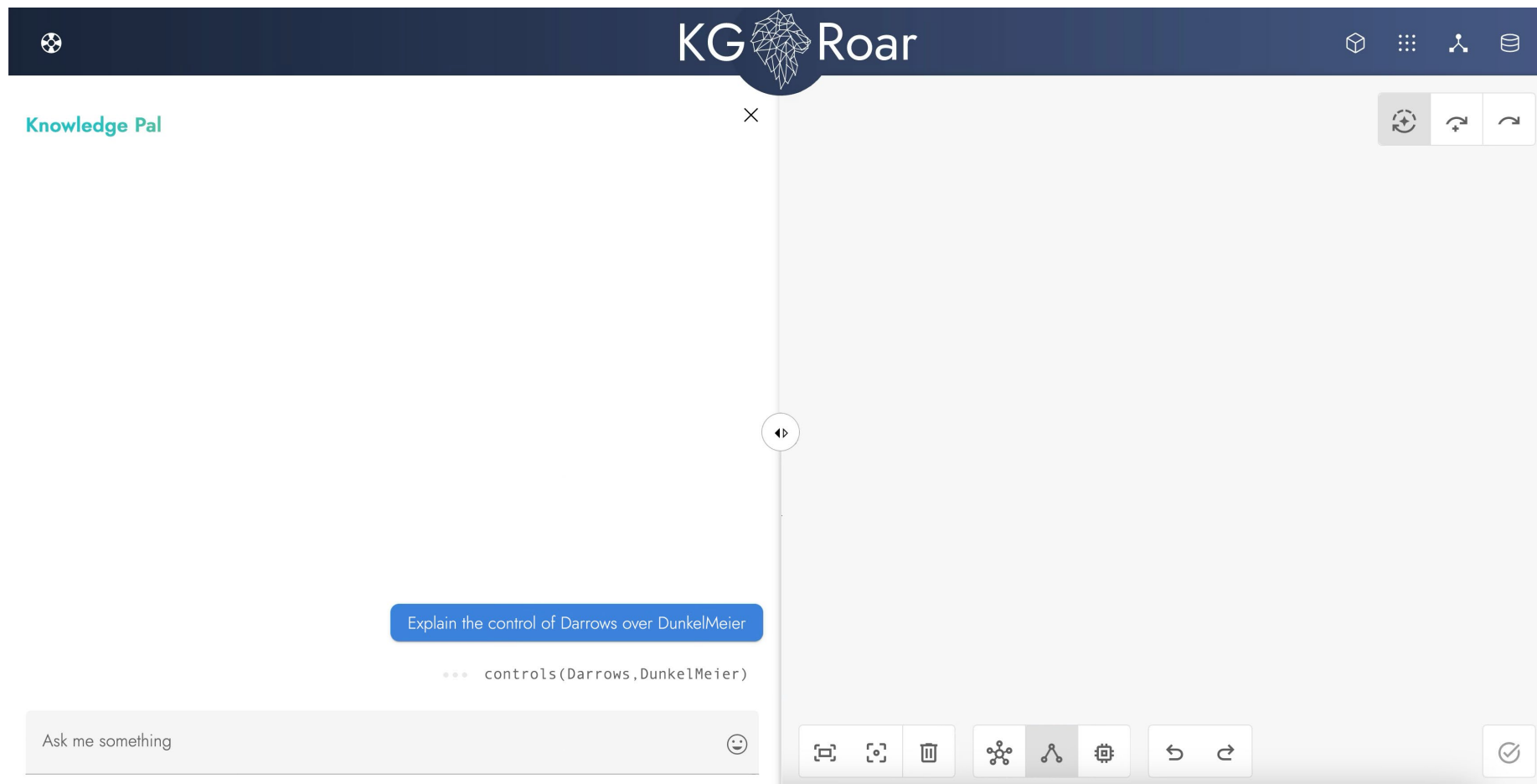
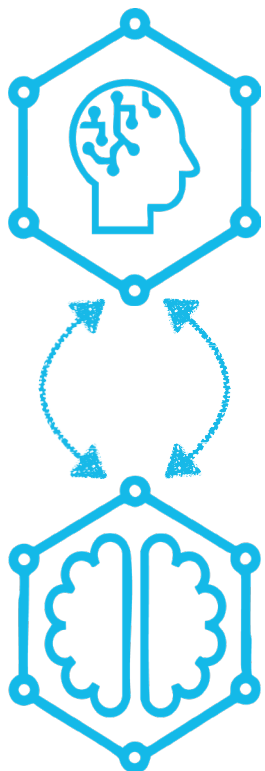


Hibridni UI u financijskoj superviziji: KG ROAR



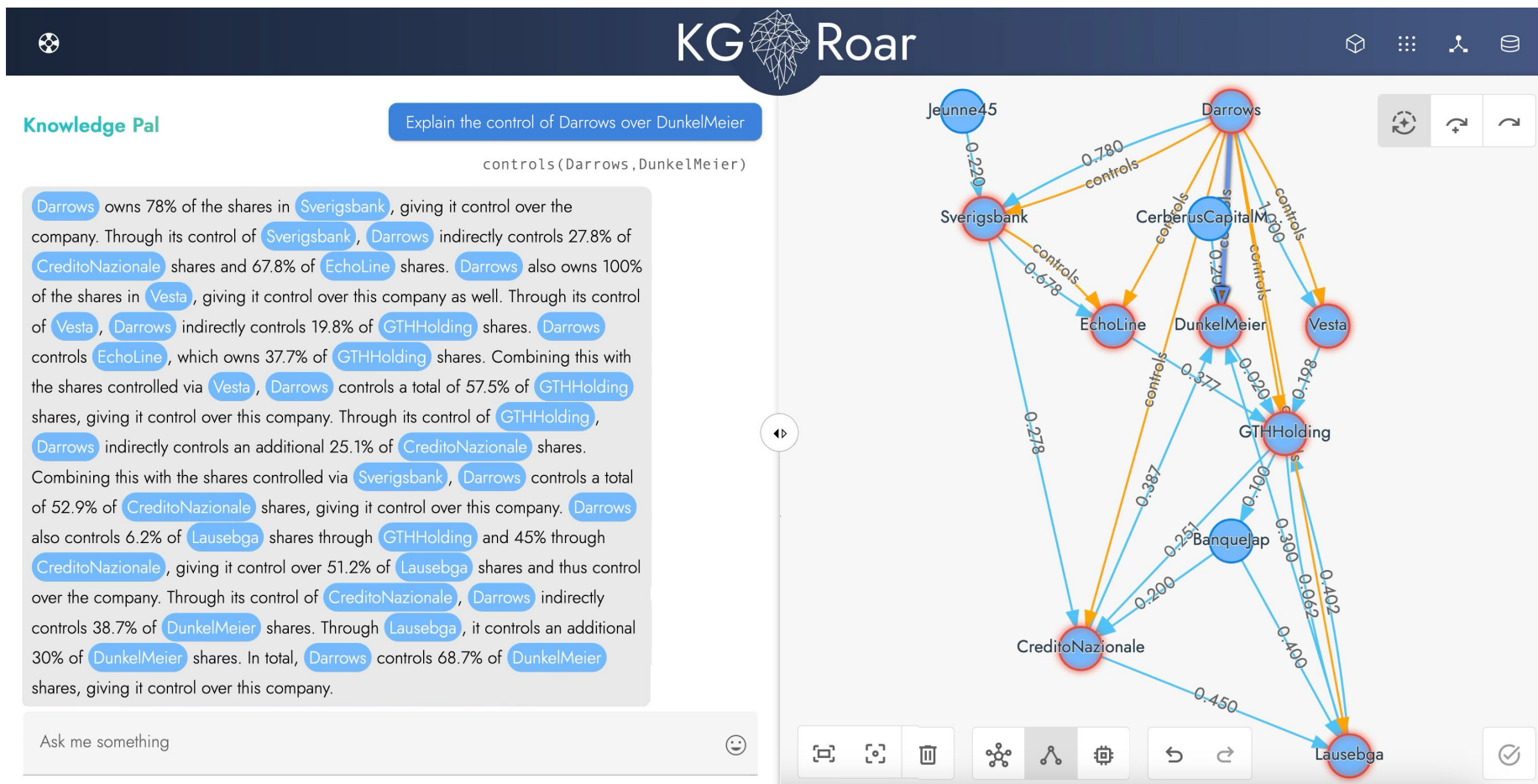
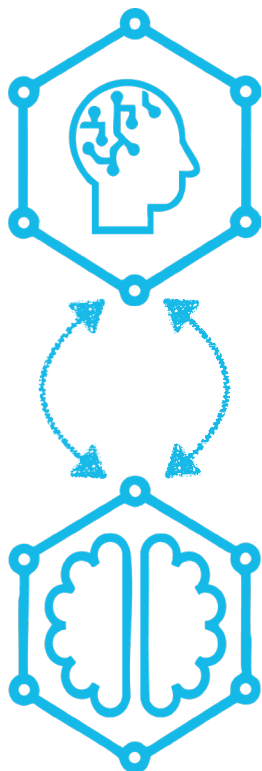


Hibridni UI u financijskoj superviziji: KG ROAR



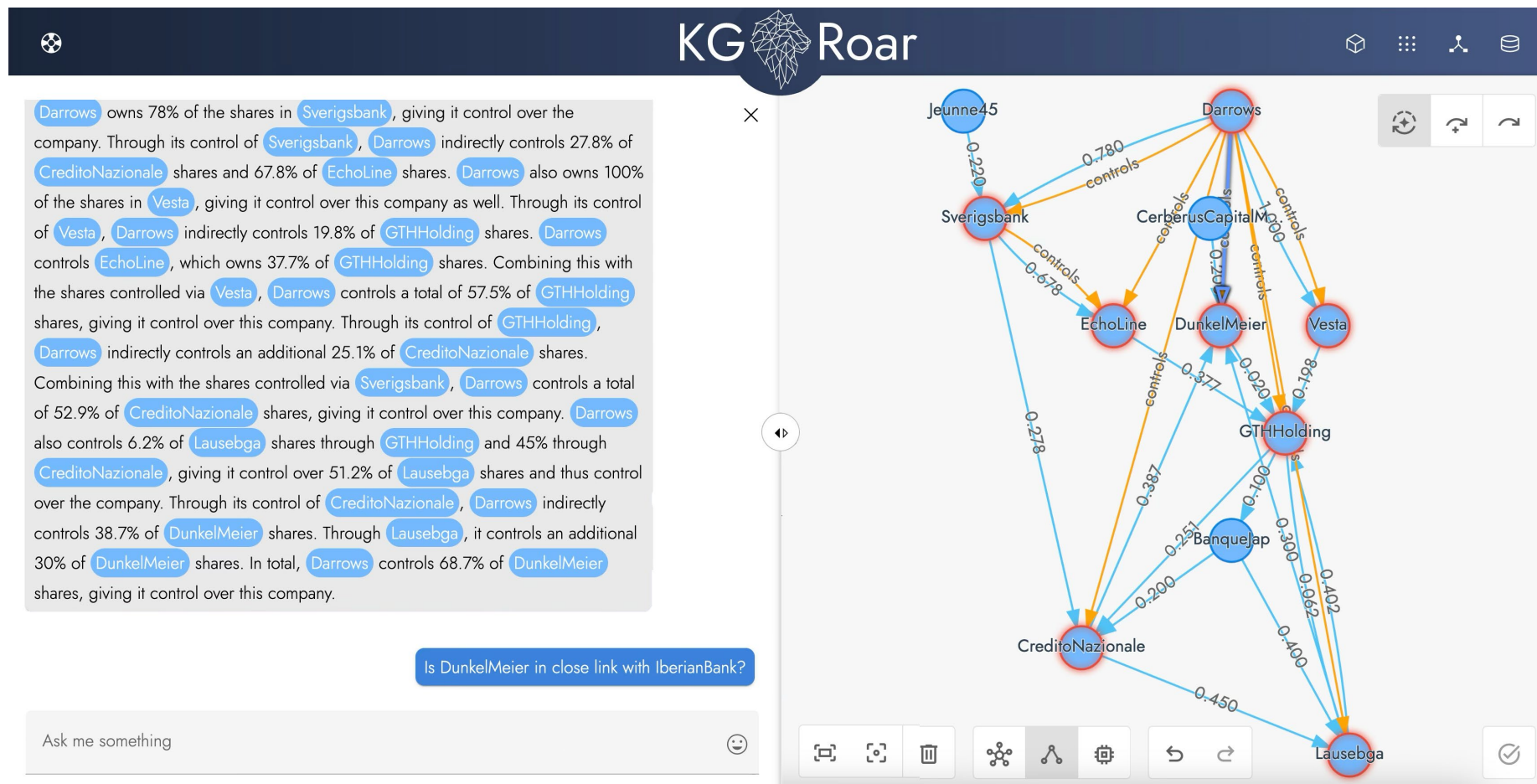
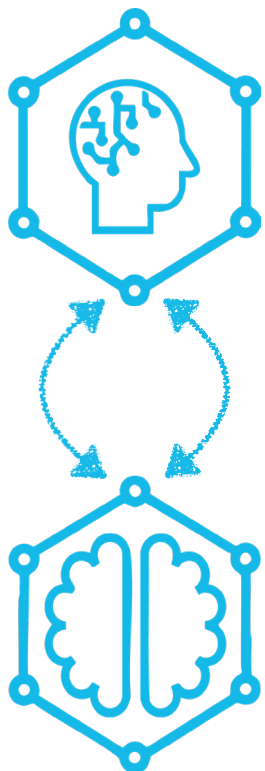


Hibridni UI u financijskoj superviziji: KG ROAR



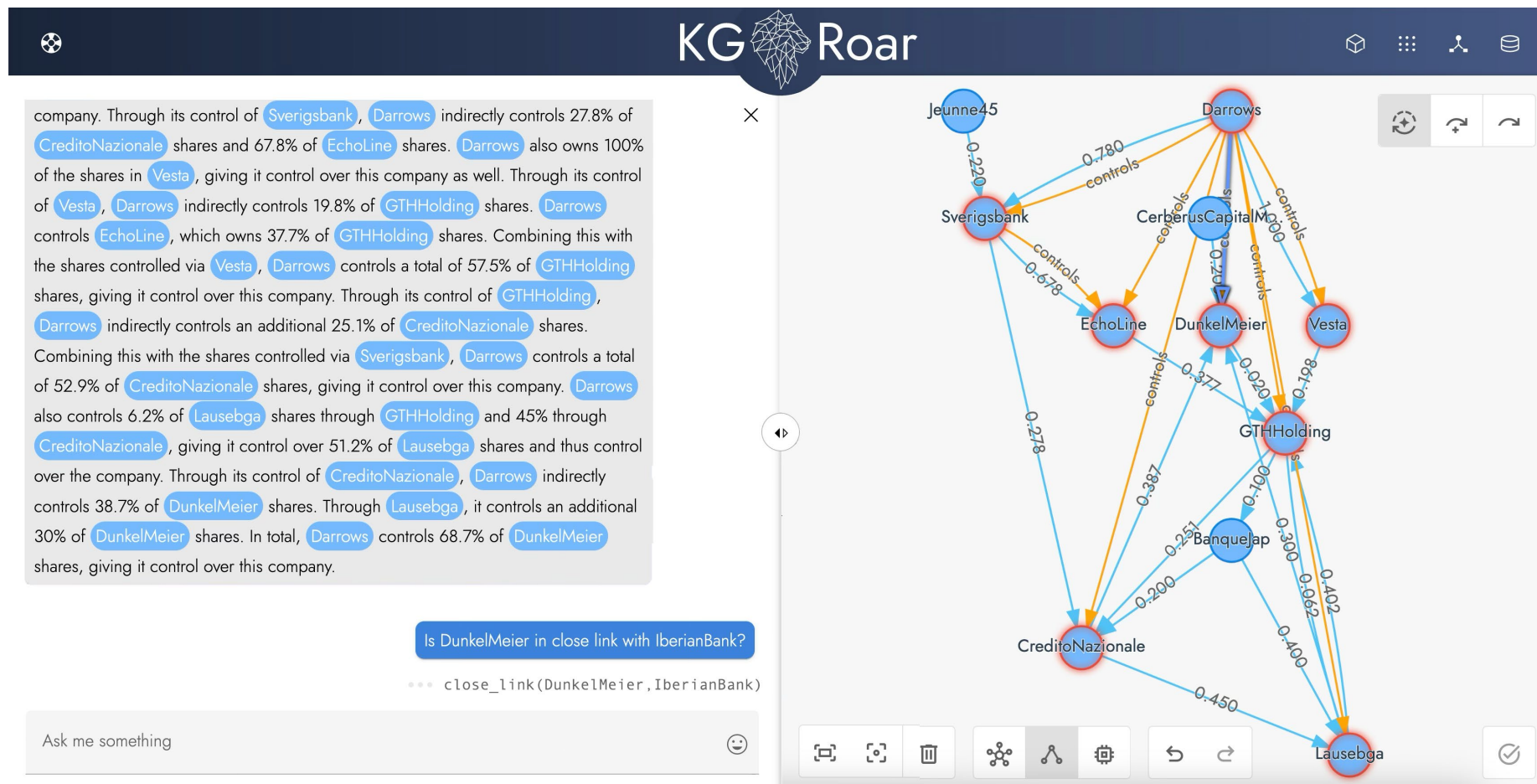
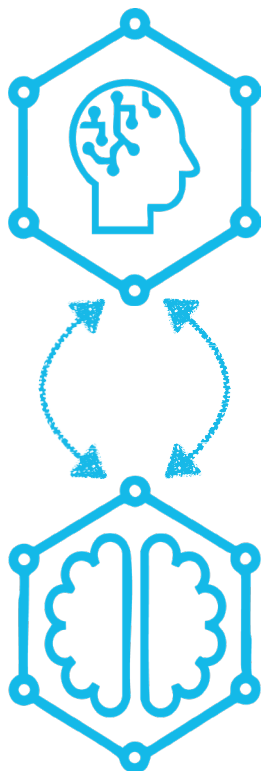


Hibridni UI u financijskoj superviziji: KG ROAR



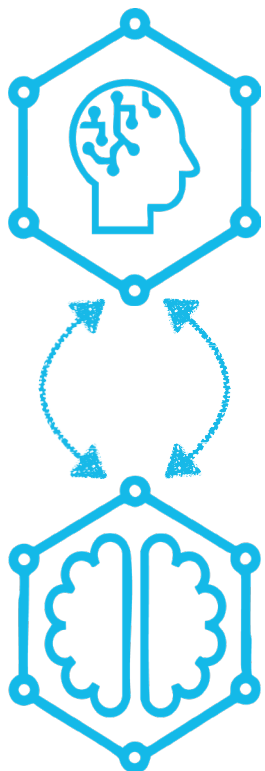




Hibridni UI u financijskoj superviziji: KG ROAR





Hibridni UI u financijskoj superviziji: KG ROAR



KG Roar

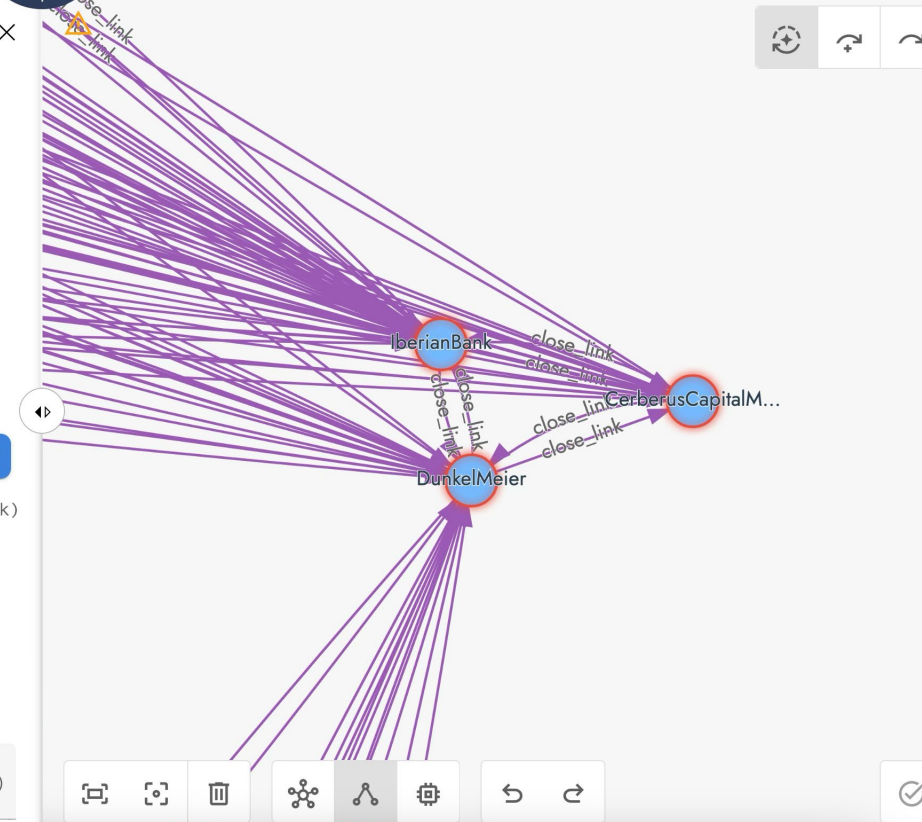
the shares controlled via **CreditoNazionale** / **Darrows** controls a total of 52.9% of **CreditoNazionale** shares, giving it control over this company. Through its control of **GTHHolding**, **Darrows** indirectly controls an additional 25.1% of **CreditoNazionale** shares. Combining this with the 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 **GTHHolding** 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?

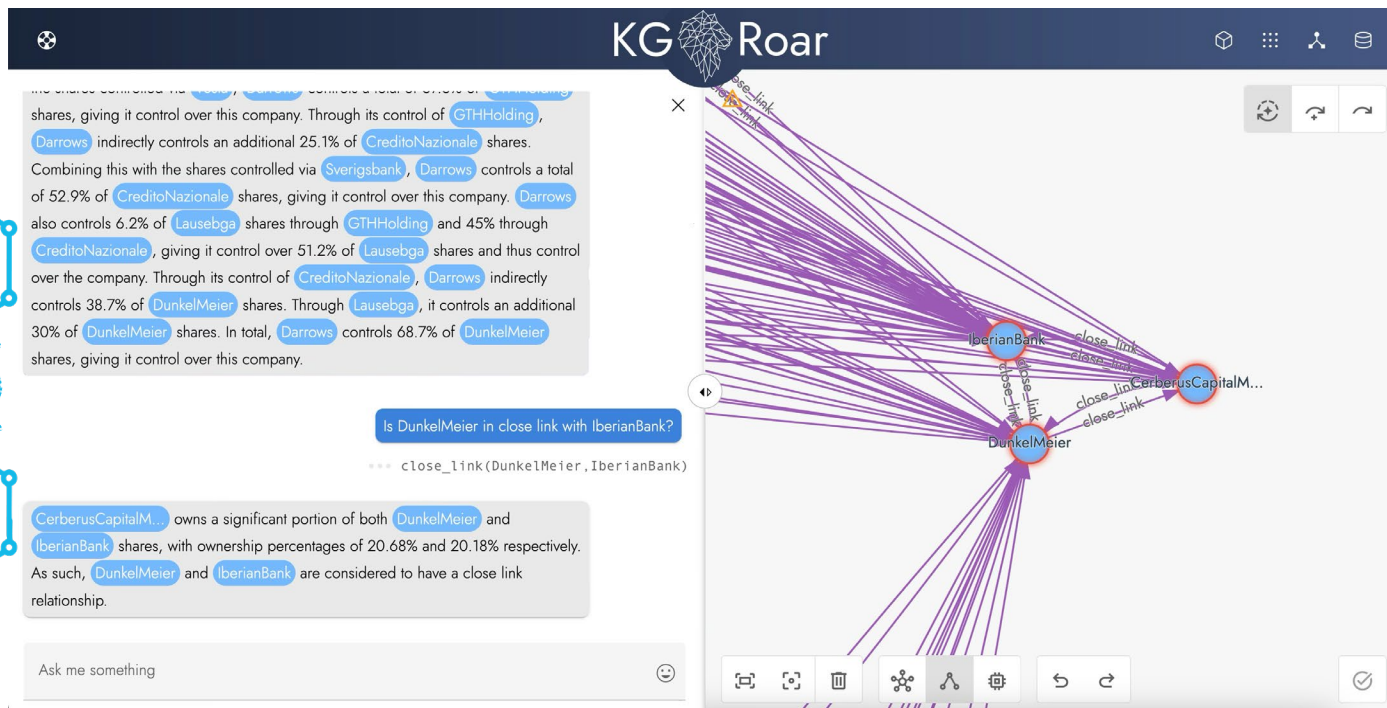
```
*** close_link(DunkelMeier, IberianBank)
```

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.

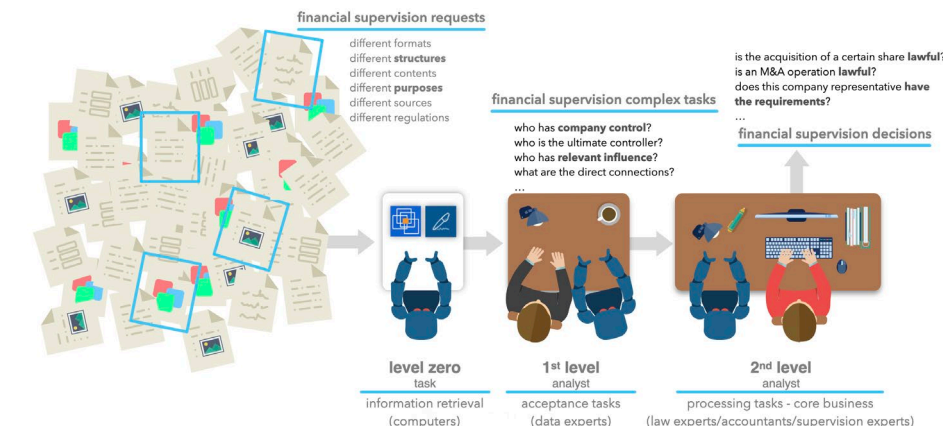
Ask me something



Hibridni UI u financijskoj superviziji: KG ROAR



The screenshot displays the KG Roar interface, which is a hybrid UI for financial supervision. It features a knowledge graph on the right with nodes representing companies like IberianBank, DunkelMeier, and CerberusCapitalM... and edges labeled 'close_link'. On the left, there is a text-based reasoning interface with a chat window. The chat window contains a query: "Is DunkelMeier in close link with IberianBank?" and a response: "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." Below the chat window is a prompt "Ask me something" with a smiley face icon.



LITERATURA:

["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 ; Fayzakhmanov, 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.



POSLOVNI SLUČAJ ZA HIBRIDNI UI U RAČUNOVODSTVENOM IZVJEŠTAVANJU: FINANCIJSKO IZVJEŠTAVANJE (engl. FINREP)



POSLOVNI SLUČAJ U RAČUNOVODSTVENOM IZVJEŠTAVANJU: FINANCIJSKO IZVJEŠTAVANJE (engl. FINREP)

Direktiva 2013/36/EU – KIO IV.

Uredba (EU) br. 575/2013

Uredba (EU) br. 2021/451

Uredba (EU) br. 2024/3117

MRS – IFRIC – MSFI

Izveštajni okvir EBA-e

Provedbeni tehnički standardi

Prilog V.

L 176/338 EN Official Journal of the European Union 27.6.2013



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





RAČUNOVODSTVENO IZVJEŠTAVANJE: FINANCIJSKO IZVJEŠTAVANJE (engl. FINREP)

OJ L, 27.12.2024

Official Journal
of the European Union

EN
L series

2024/3117

27.12.2024

1. Balance Sheet Statement [Statement of Financial

1.2 Liabilities

0011	eba	European Banking Authority
0021		
0031		
0041		
0051		
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0071		
0081		
0091		
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0301		

ANNEX V			
INSTRUCTIONS FOR REPORTING ON FINANCIAL INFORMATION			
[ECB/2013/33 Annex 2, Part 1]			
Balance sheet items			
0240	Tax liabilities	IAS 1.54(n-n)	10
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)	
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	
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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

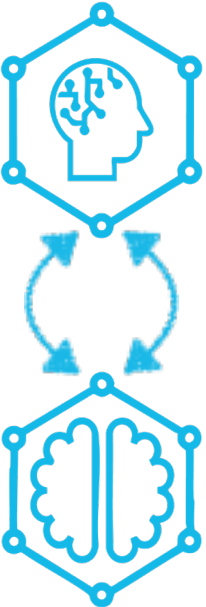
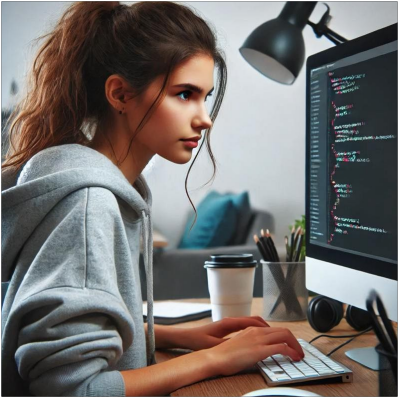


L 176/338 EN Official Journal of the European Union 27.6.2013

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 2002/87/EC and repealing Directives 2006/48/EC and 2006/49/EC





HIBRIDNI UI U RAČUNOVODSTVENOM IZVJEŠTAVANJU: FINANCIJSKO IZVJEŠTAVANJE (engl. FINREP)

temeljni kapital koji se vraća na zahtjev

Molim bilateralni UI

da pročitá svu dokumentaciju i da mi da
rješenje koje će biti u skladu s konceptom
„temeljni kapital koji se vraća na zahtjev”

....

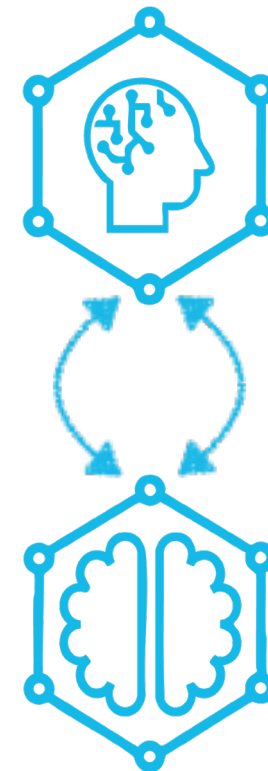
Temeljni kapital koji se vraća na zahtjev (x) :-

Instrument kapitala (x), Izdan (x), \neg

Temeljni kapital (x).

Temeljni kapital koji se vraća na zahtjev (x) :-

Zadružniudio (x), \neg Temeljni kapital (x).

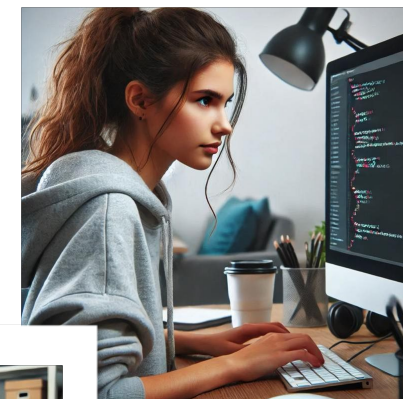
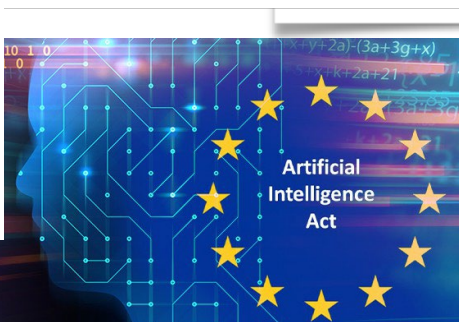




HIBRIDNI UI U RAČUNOVODSTVENOM IZVJEŠTAVANJU

REZULTATI HIBRIDNOG UI-ja

- pristup kvazi-nulto kodiranje
- može se objasniti dizajnom
- pregledljivo
- upravljanje rizicima usklađivanja
- uključivo
- čovjek u petlji
- činjeničnost
- chatbot/prikupljanje podataka u odnosu na zadatke iz stvarnog svijeta
- isplativo
- skalabilnost
- fleksibilno na izmjene i dopune





HVALA VAM ZA PAŽNJU



Knowledge Graph Lab



BANCA D'ITALIA
EUROSISTEMA



Knowledge Graph Lab

dbai
Databases and Artificial
Intelligence Group

WITF
WIRTSCHAFTS
UNIVERSITÄT
WIEN
INSTITUT FÜR
WISSENSCHAFT
UND TECHNOLOGIE FUND



BANCA D'ITALIA
EUROSISTEMA



Informatics

AI made in Austria: Kick-off Meeting of the FWF-funded Cluster of Excellence "Bilateral AI"

On February 26, 2025, around 300 researchers, industry professionals, and decision makers gathered at Johannes Kepler University Linz (JKU) to discuss the project's vision and goals. Two Vice Rectors of TU Wien, Peter Ertl (Vice Rector Research, Innovation, International Affairs) and Wolfgang Kastner (Vice Rector Digitalization and Infrastructure), attended the event, as did Gerti Kappel, Dean of TU Wien Informatics.



CENTRAL BANKING

Economics Fintech Governance Reserves Directory Benchmarking Training Events Awards

Central Banking Awards press release | Fintech Benchmarks 2025 report | Fernando Restoy interview | Revamped Central Bank

Risk manager: Bank of Italy

New credit assessment, corporate mapping and climate tools have helped to bolster risk oversight

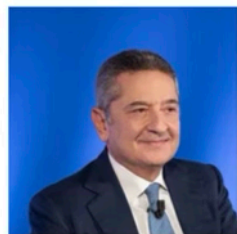


Since the outbreak
banks around the w
large-scale asset pu

Measured using coi
that financial risk has grown at the same rate as balance sheets, since rating
agencies tend to look at the average probability of default of issuers over
time.

The Central Banking Awards

Fabio Panetta, Governor, Bank of Italy, said:



Fabio Panetta

"I am very proud of this prestigious recognition from Central Banking. The Risk manager of the year award honours our unwavering commitment to prudent, forward-looking risk management. It also highlights our key role in supporting the financial system when, in times of crisis, other market participants engage in widespread de-risking."



Office of Science and Technology Policy

...mentioned in a [technology report](#) by the White House ([Office of Science and Technology Policy](#)) as a "key innovator in the European Financial Knowledge Graph Space". Such report is a step for the White House to defining a strategy to "power 21st century data science and next-generation Artificial Intelligence". The Team was explicitly mentioned with reference to its Knowledge Graphs track and to the ability to consistently disseminate its AI/CS research in academic venues...