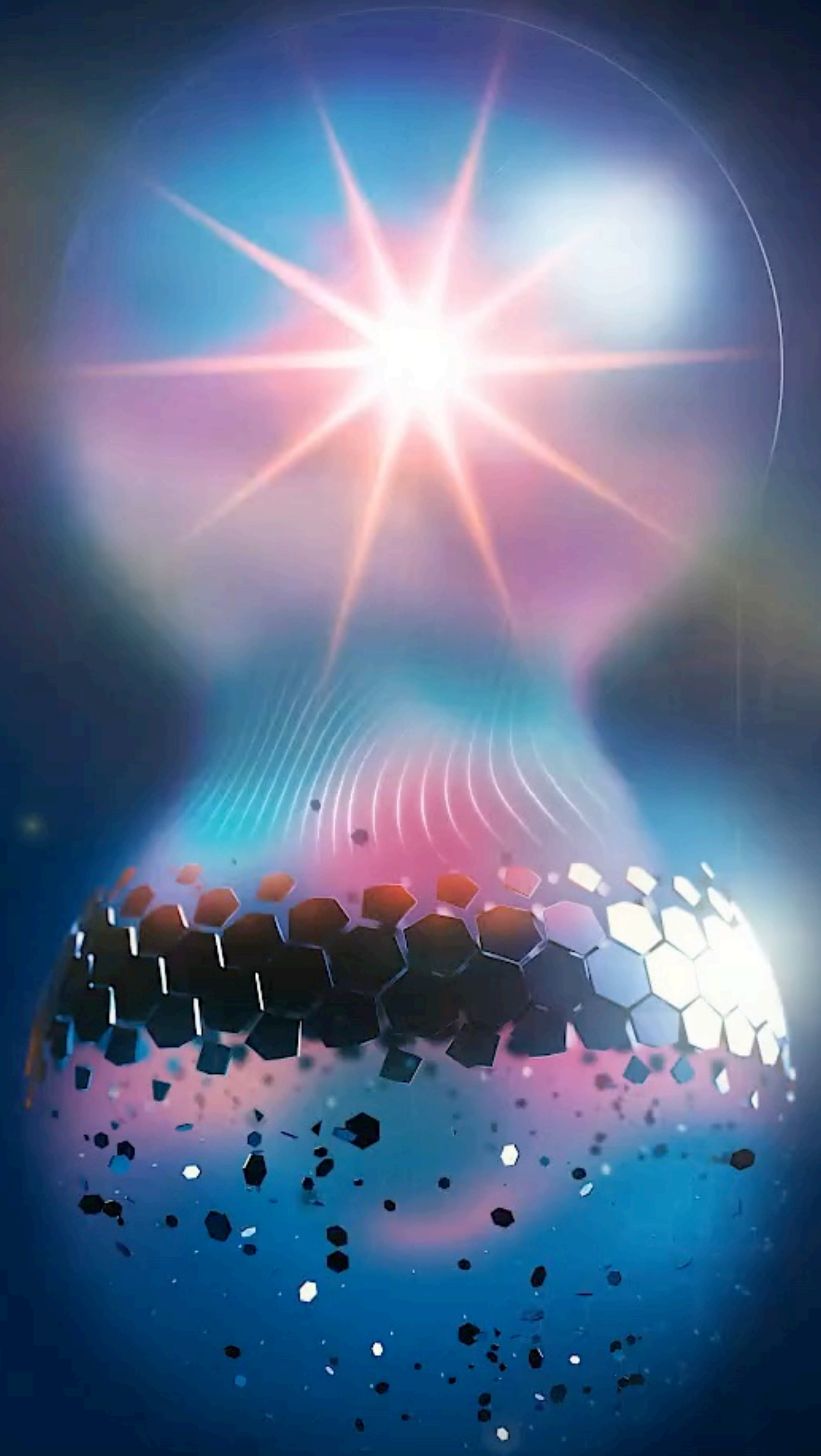


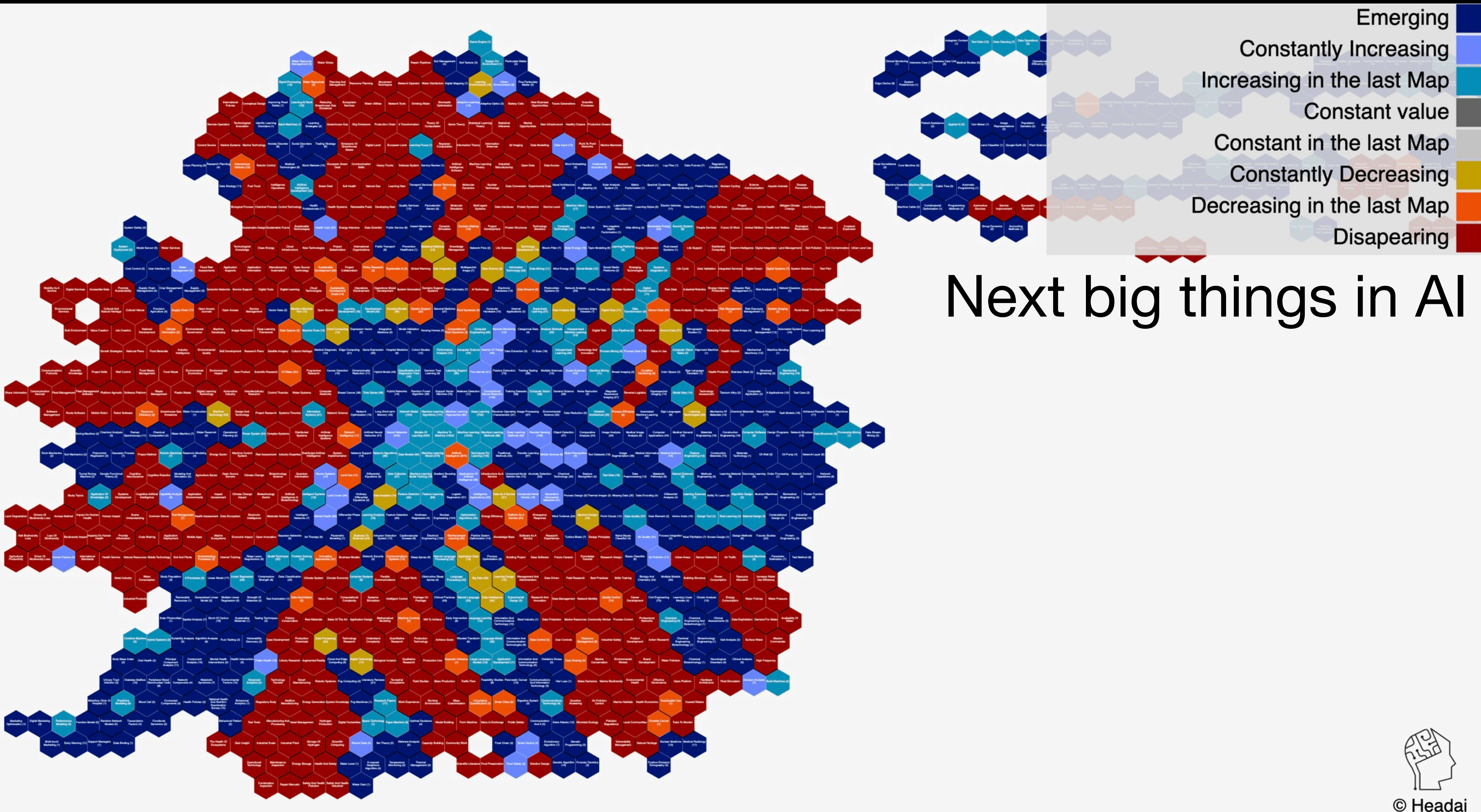
Dual-Use Skills

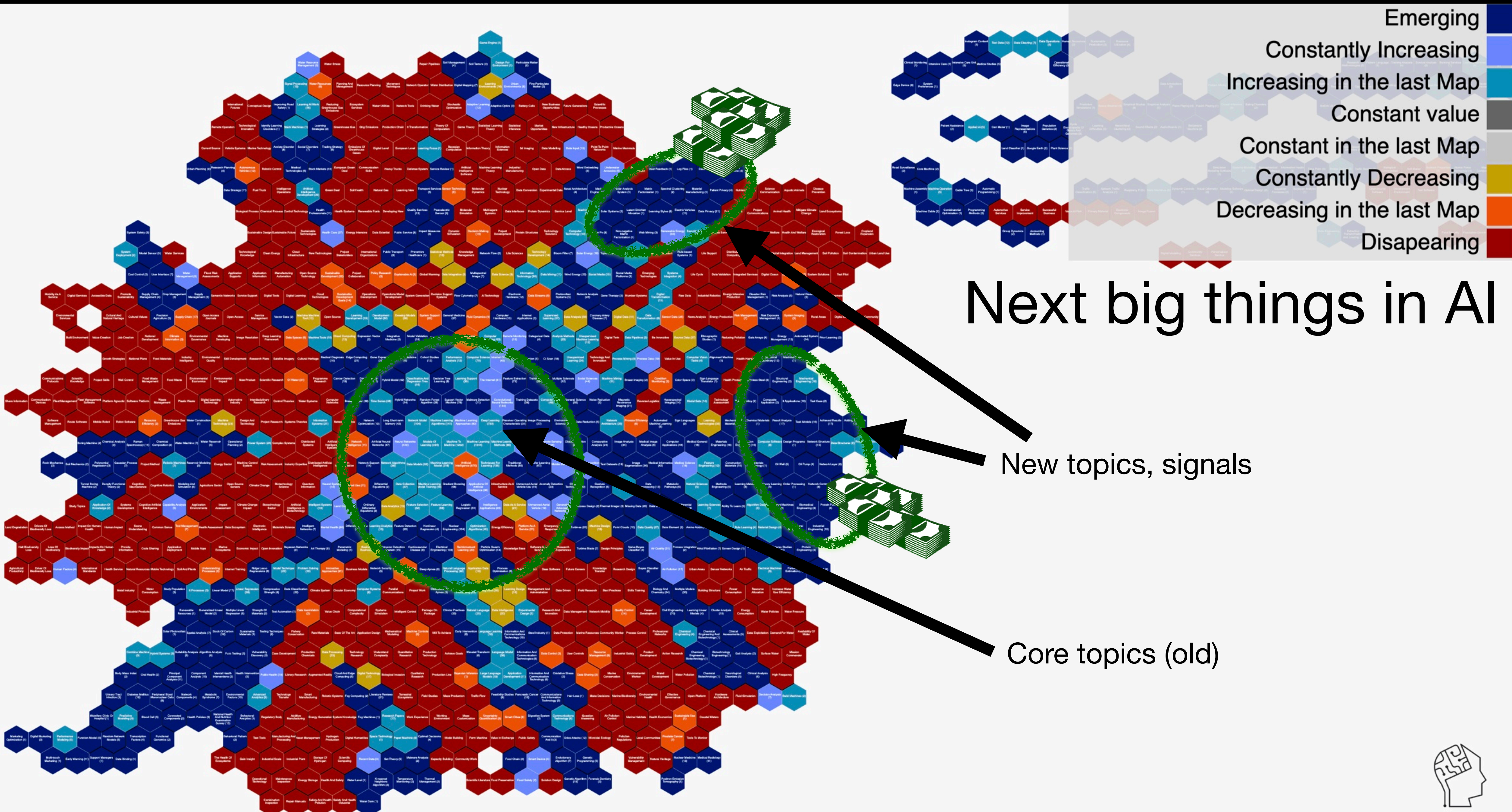
Securing Talent for EDTs*

*emerging and disruptive technologies

Harri Ketamo
Founder, Headai





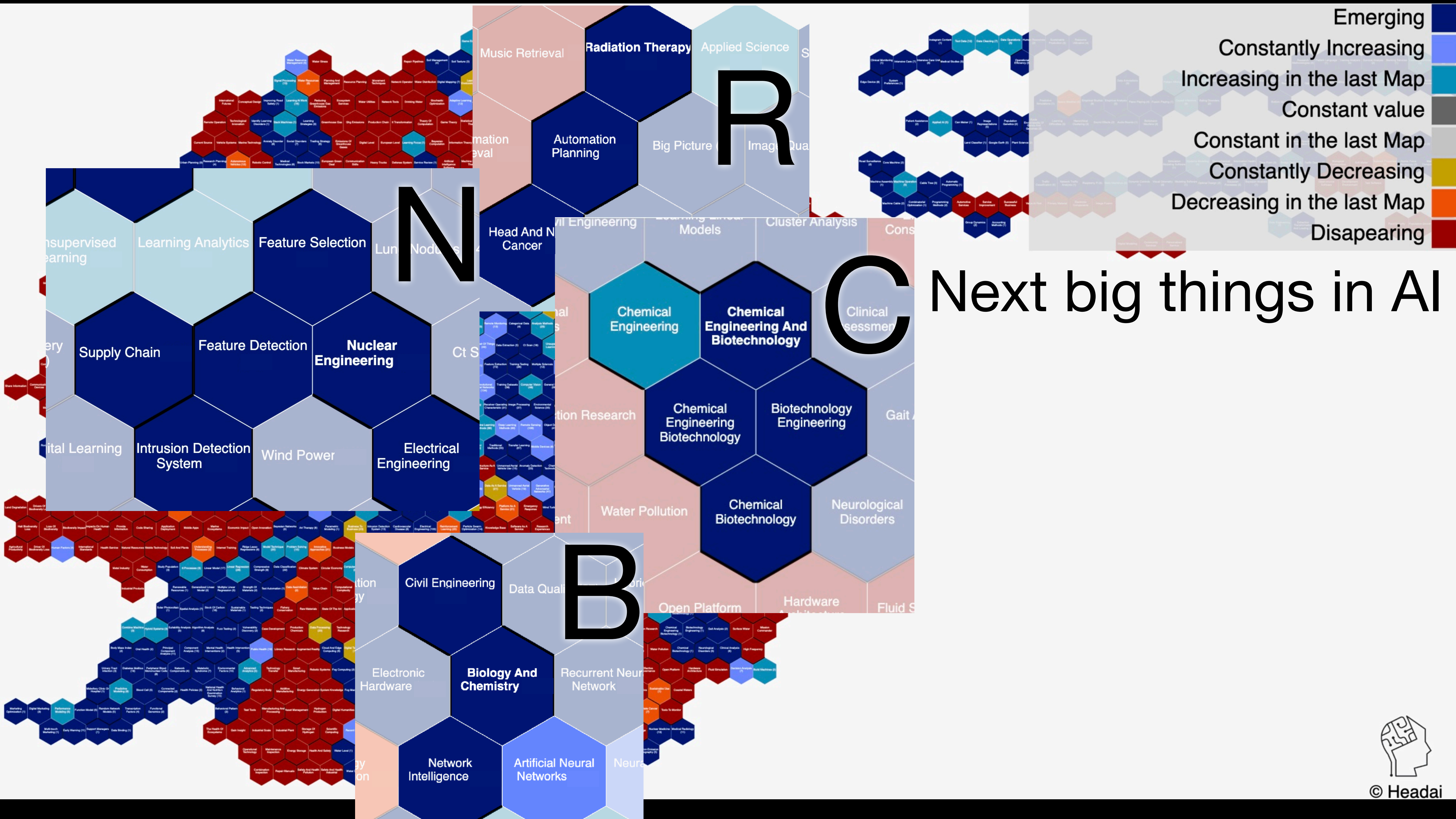


Next big things in AI

New topics, signals

Core topics (old)






Next big things in AI



The future of European competitiveness

Part A | A competitiveness strategy for Europe

SEPTEMBER 2024




AI Skills Needs Analysis


AN INSIGHT INTO THE AI ROLES AND SKILLS NEEDED FOR EUROPE


31 May 2023

Co-funded by the European Union




Philippines Economic Update JUNE 2022 EDITION Strengthening the Digital Economy to Boost Domestic Recovery






Home About Us LEADS 2022-2024 ADS Cluster Insights News Events Contact us

DRIVING EUROPE'S DIGITAL COMPETITIVENESS






ABOUT US NEWS & EVENTS RESOURCES CONTACT US TOOLS Stay Updated

Building a human-centric and trusted ecosystem to share and access skills data

We prepare the ground for the future deployment of the first-time-ever European Data Space for Skills that will offer practical benefits to organisations and individuals in the digital age.

Discover More



Data

DATA ACCESSIBILITY

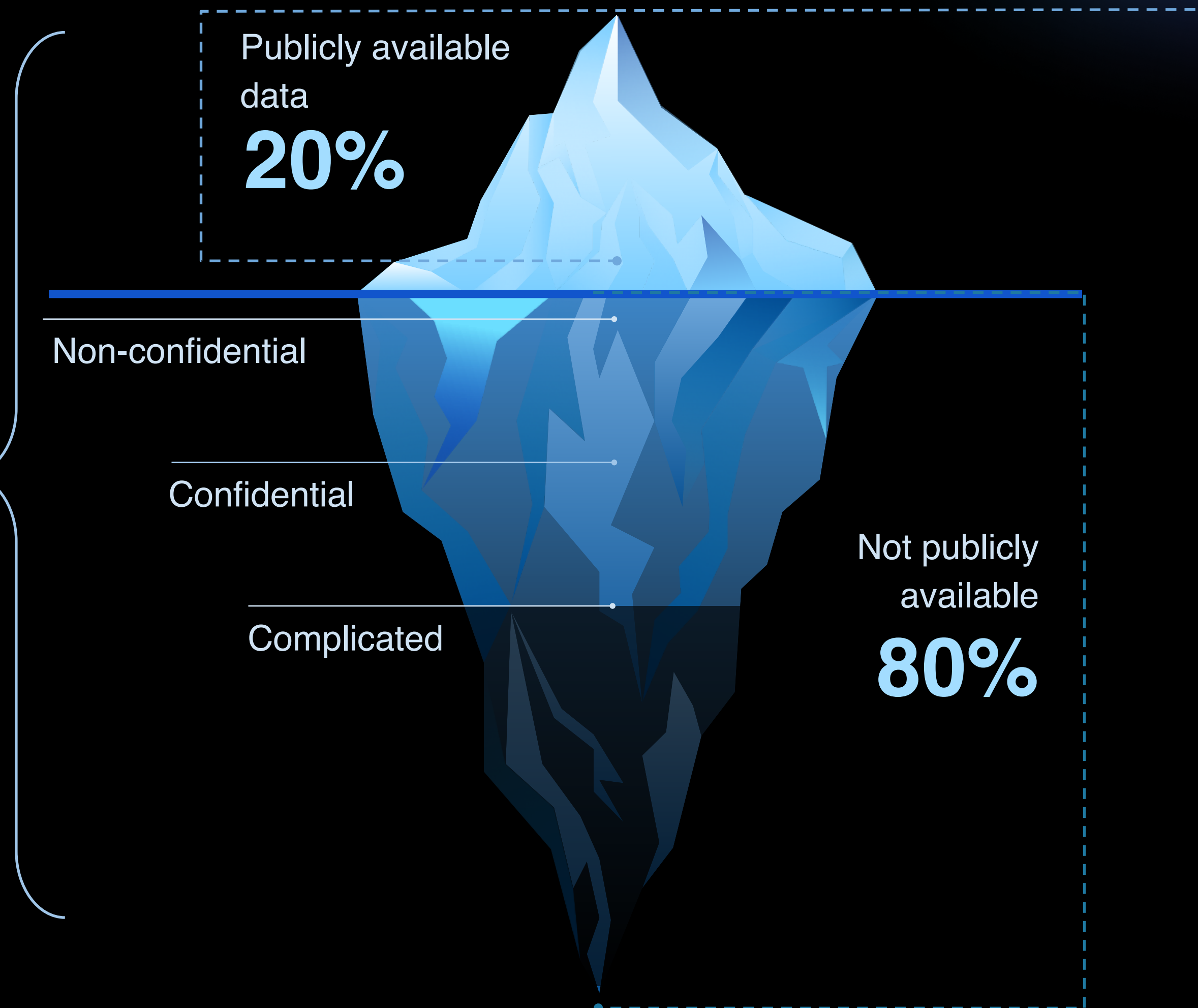


Supply and Demand

- ✓ Job ads
- ✓ Research papers
- ✓ Investments
- ✓ News
- ✓ Public labor market reports
- ✓ Policy collections (eg Green Deal)
- ✓ Patents
- ✓ Curriculum & courses & training

- ✓ *Personal skills data
- ✓ *Corporate workforce analytics
- ✓ *Learning platforms

- Illegal market places
- Deep web
- Dark web
- Tor
- I2P



Challenges

Semantic interoperability
Governance
Legal compliance
Information value

Methods

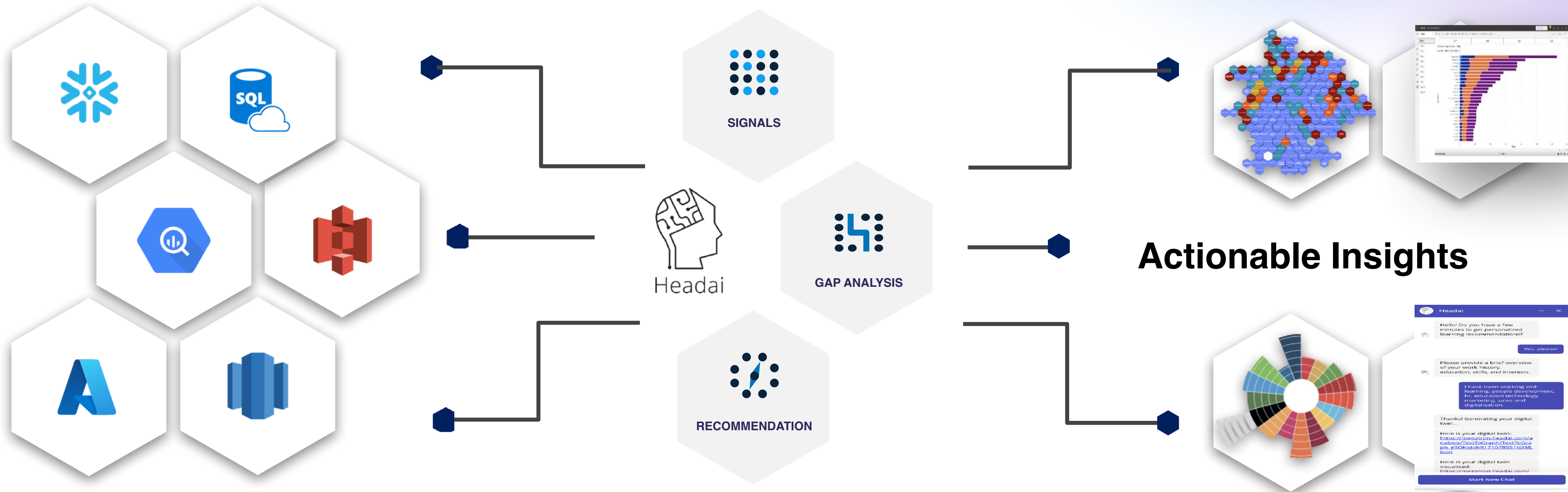


Data Meets Direction





Data Meets Direction



Data sources
Any unstructured
text data

Cognitive, Predictive AI
Advanced qualitative analytics

Data visualisations,
GenAI reports. RAG,
Chatbots etc.

[Personal customers](#) > [Professional information](#) > Information security expert

Information security expert

Professions

Published 18.4.2024

An information security expert specialises in information security issues. Their job is to protect data, information systems, networks and other digital resources from data breaches, malware and other information security breaches. In addition to competence related to information security, the profession requires training and interaction skills.

Jobs



Requirements



Education



Salary



Information security expert

Professions

Published 18.4.2024

An information security expert specialises in information security issues. Their job is to protect data, information systems, networks and other digital resources from data breaches, malware and other information security breaches. In addition to competence related to information security, the profession requires training and interaction skills.

Information security expert

Information security



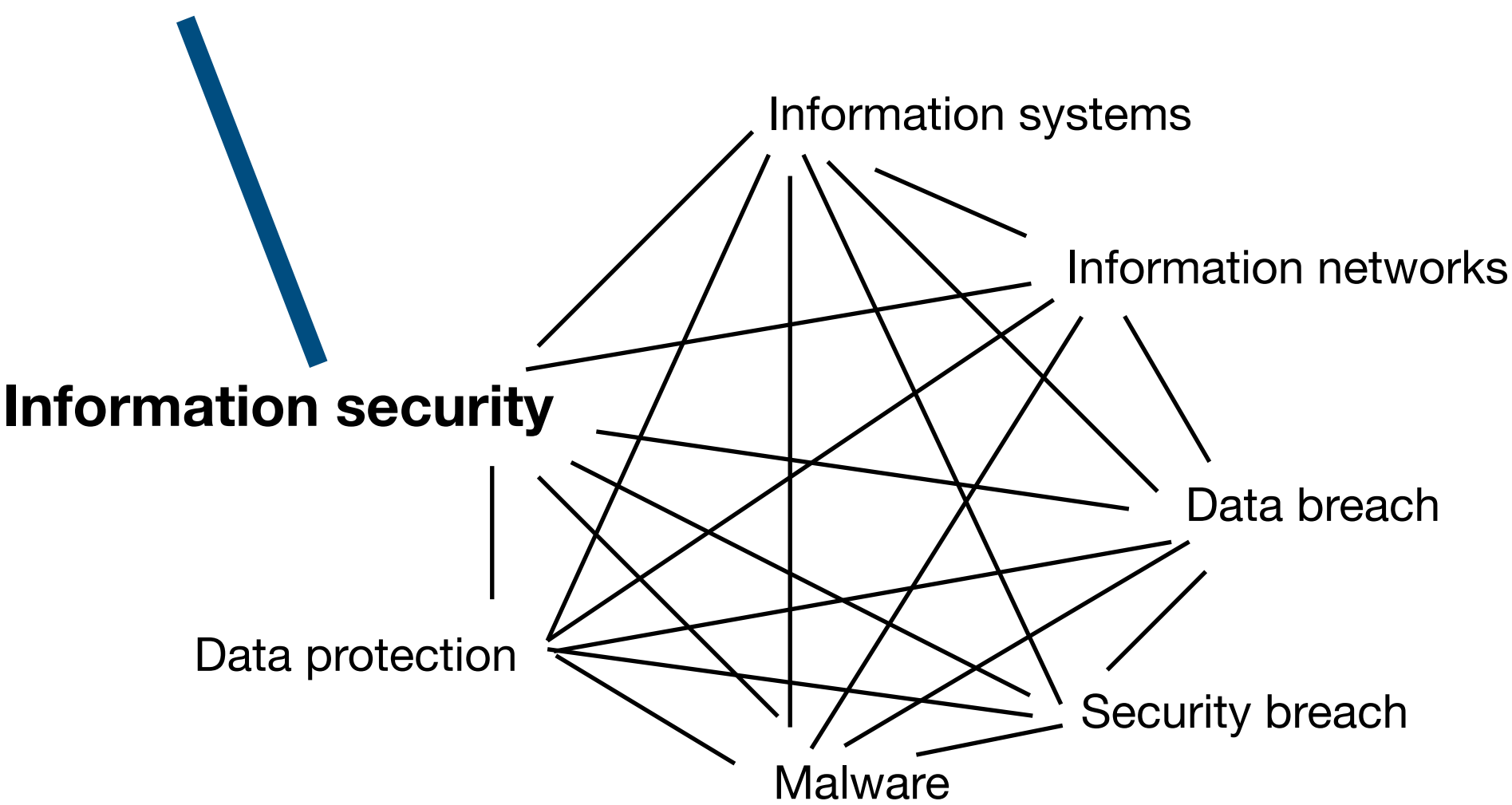
```
graph TD; A[Information security expert] --> B[Information security]
```


Information security expert

Professions Published 18.4.2024

An information security expert specialises in information security issues. Their job is to protect data, information systems, networks and other digital resources from data breaches, malware and other information security breaches. In addition to competence related to information security, the profession requires training and interaction skills.

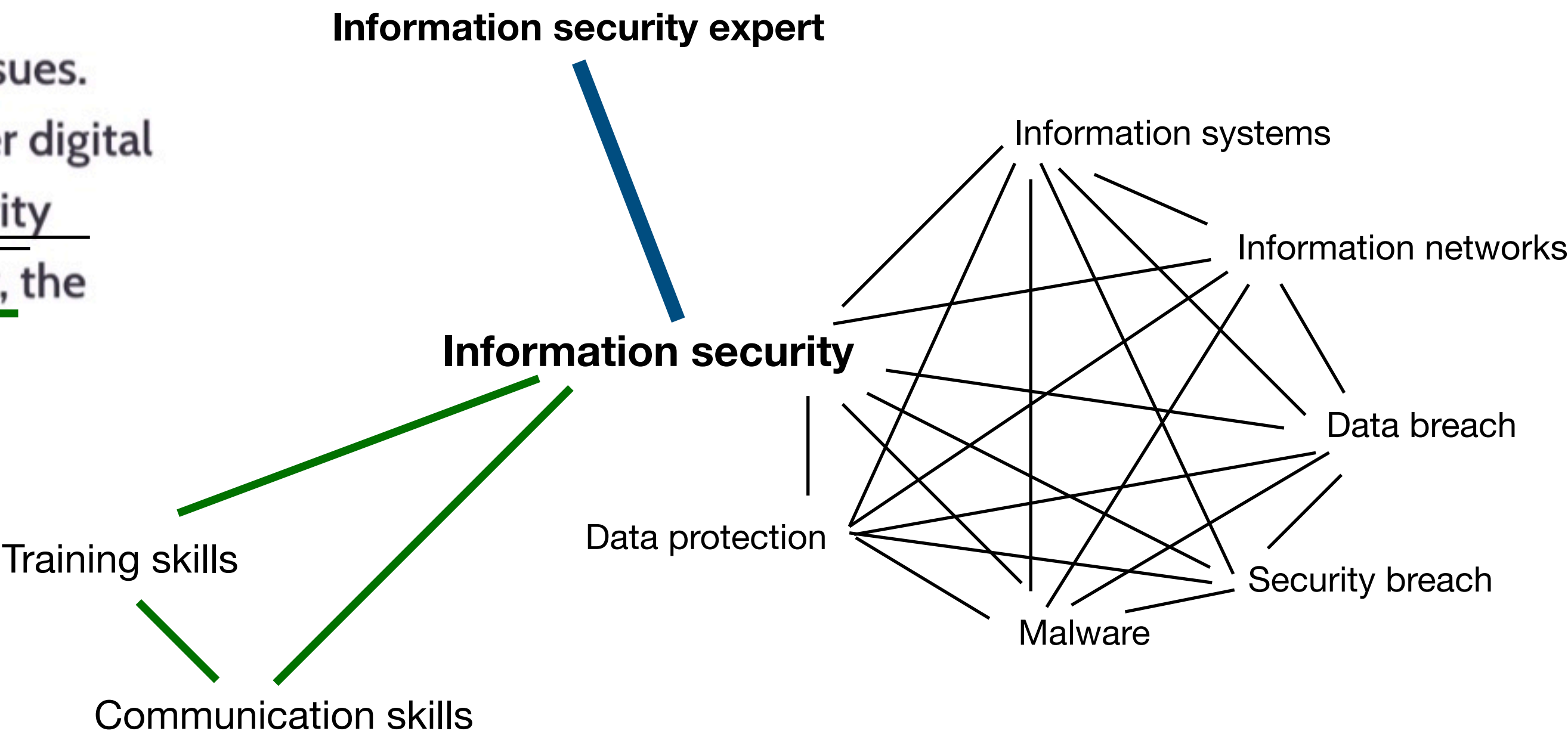
Information security expert

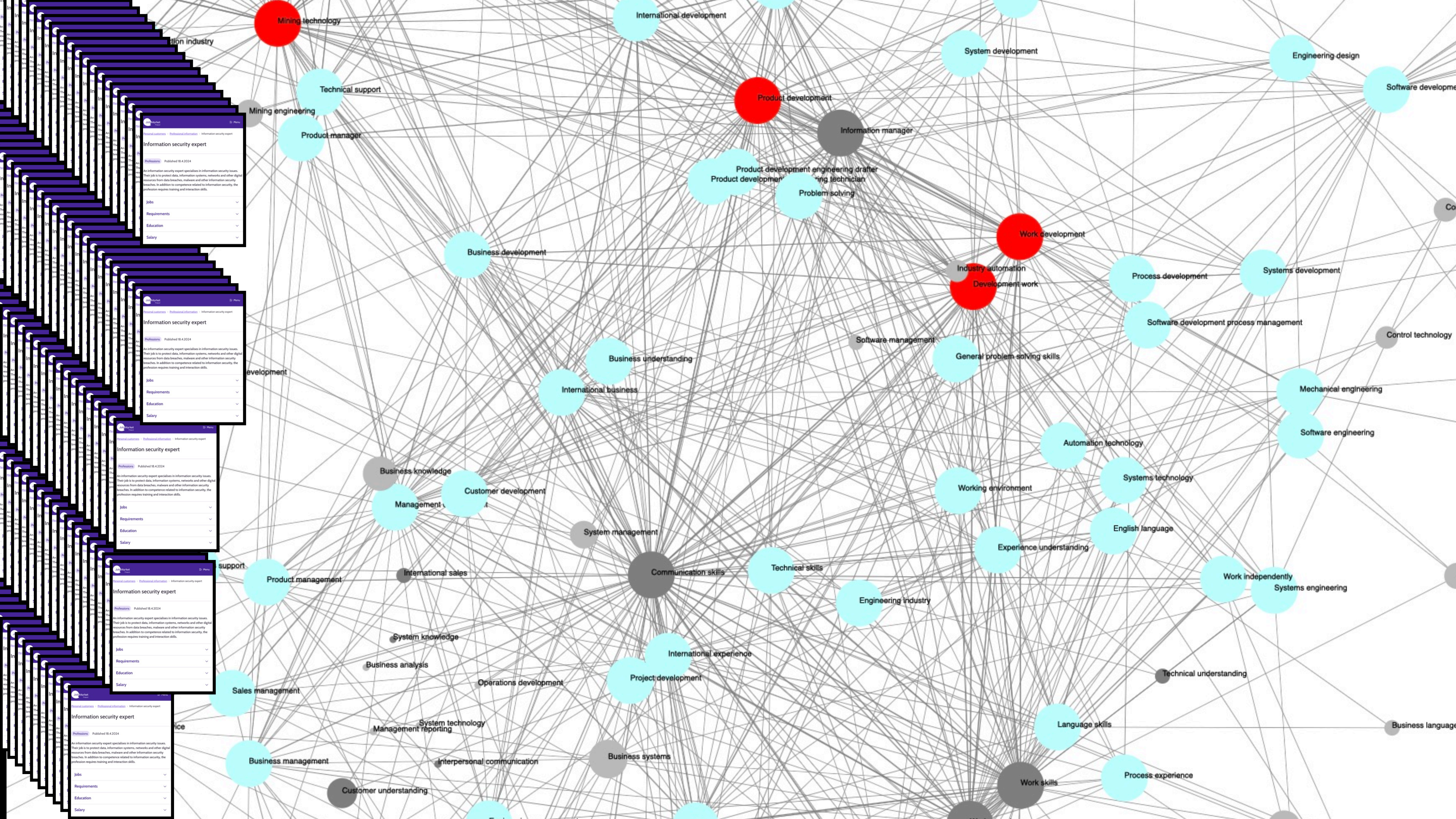


Information security expert

Professions Published 18.4.2024

An information security expert specialises in information security issues. Their job is to protect data, information systems, networks and other digital resources from data breaches, malware and other information security breaches. In addition to competence related to information security, the profession requires training and interaction skills.

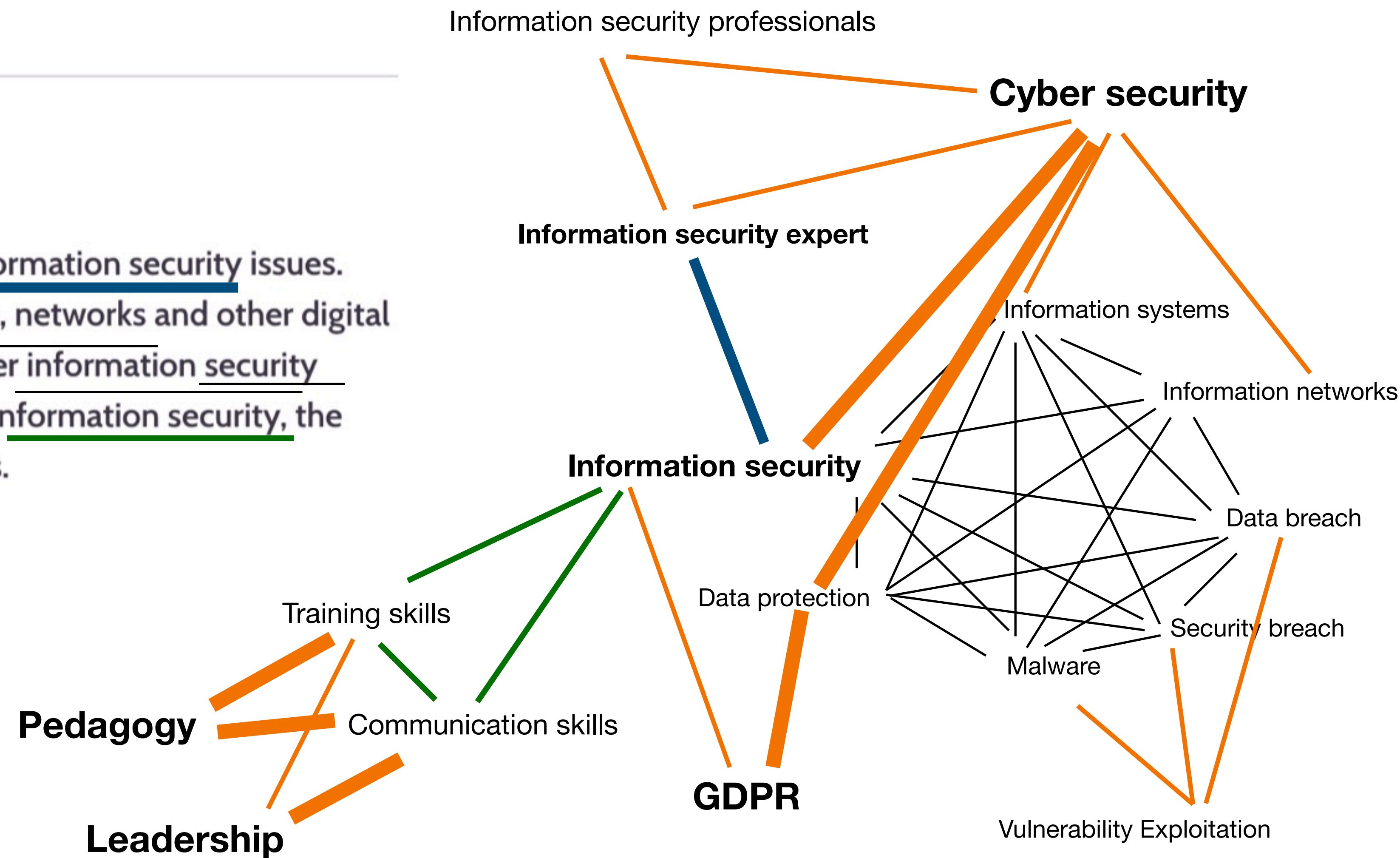




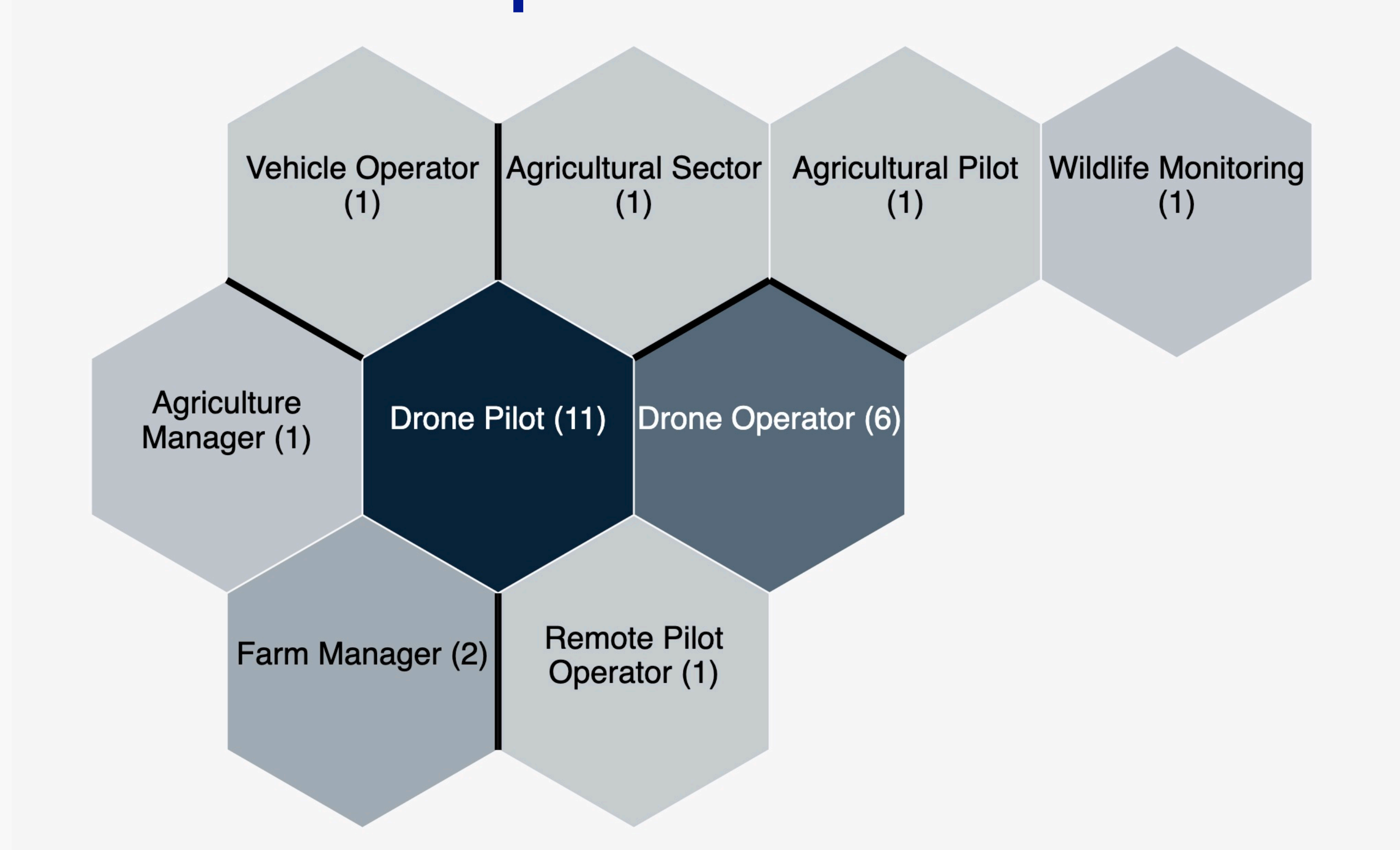
Information security expert

Professions Published 18.4.2024

An information security expert specialises in information security issues. Their job is to protect data, information systems, networks and other digital resources from data breaches, malware and other information security breaches. In addition to competence related to information security, the profession requires training and interaction skills.

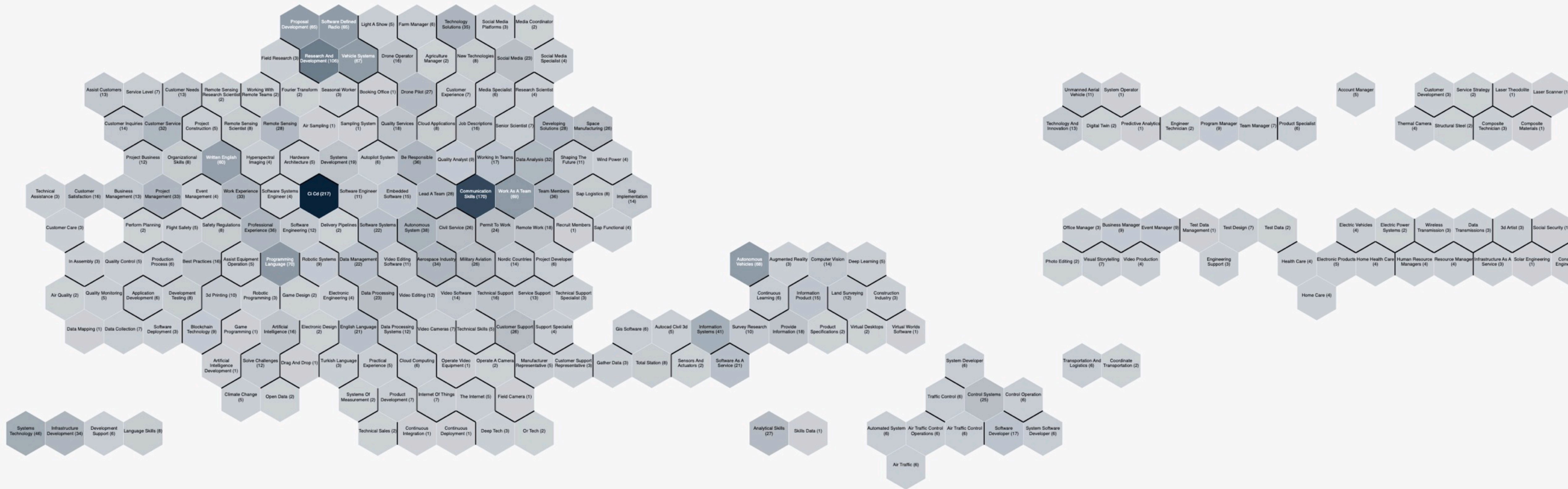


1 unit = skill / competence / technology / topic

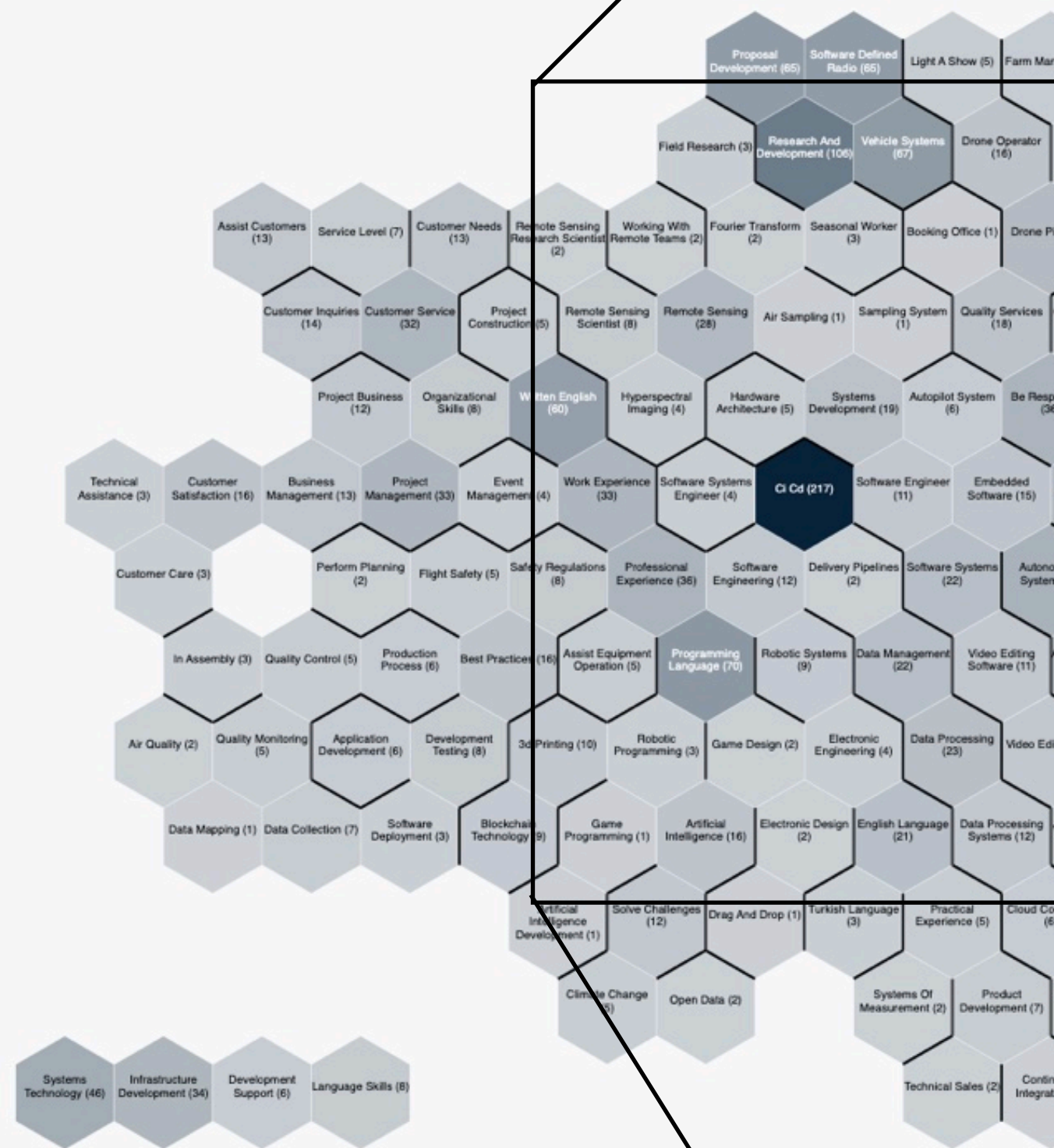


Set of skills shows the context

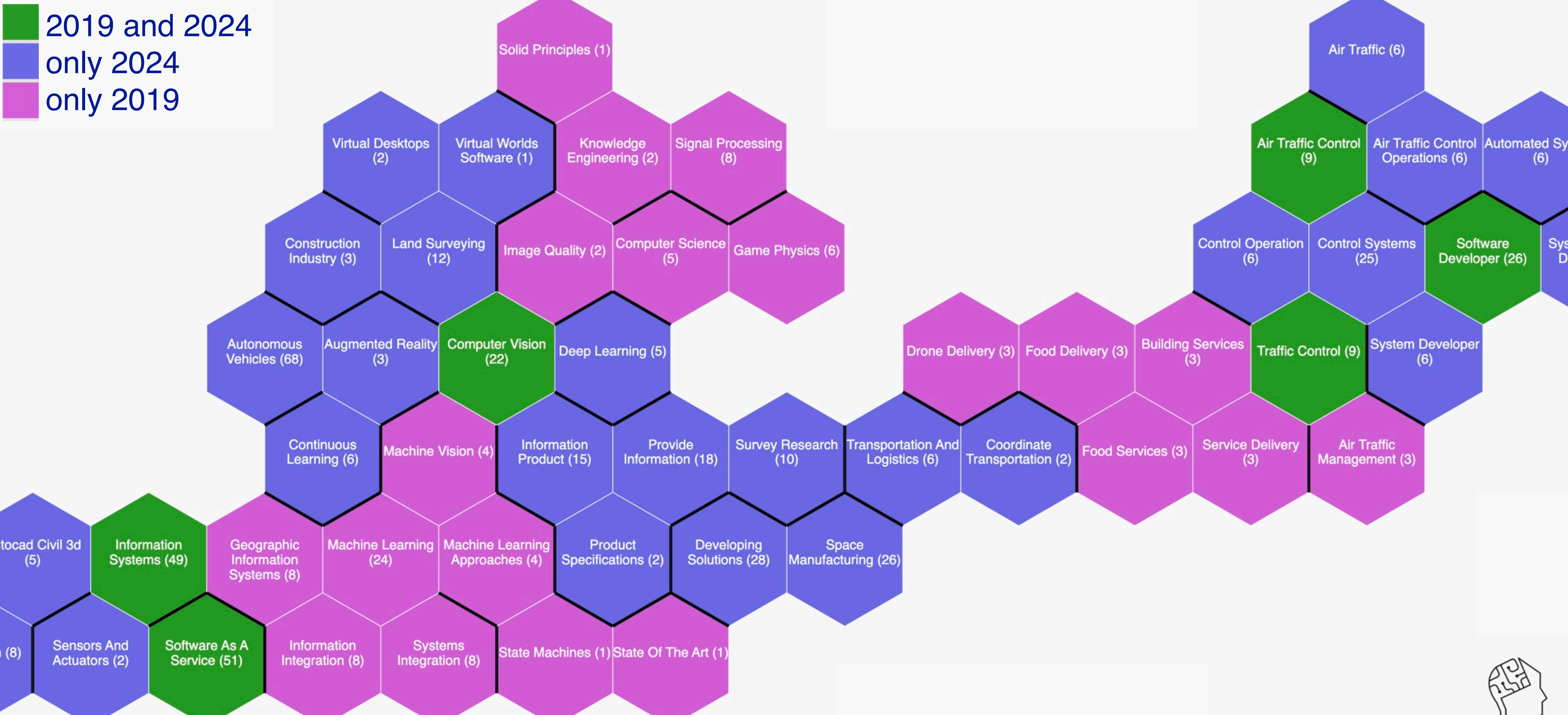
All drone related topics



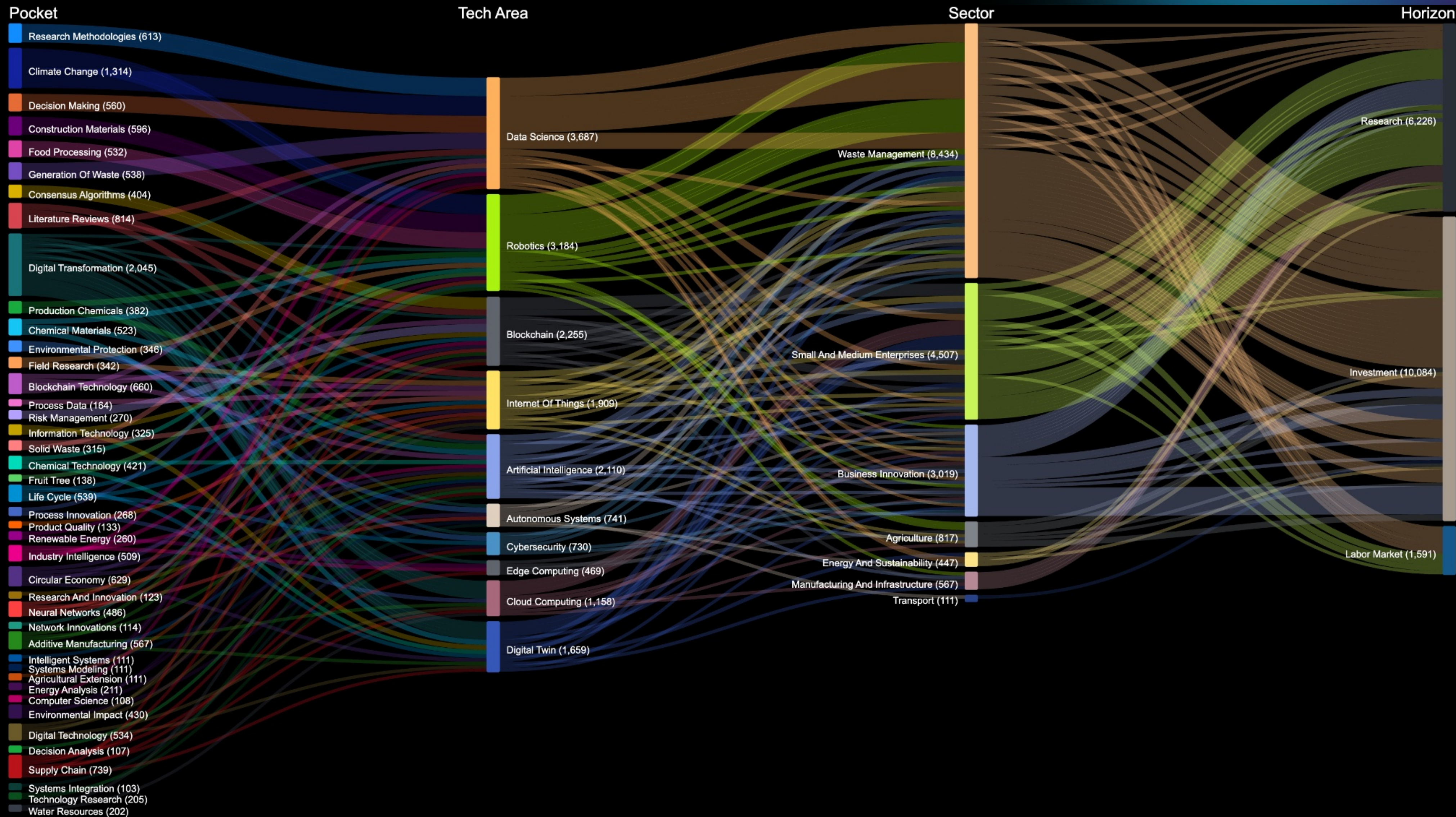
All drone related topics

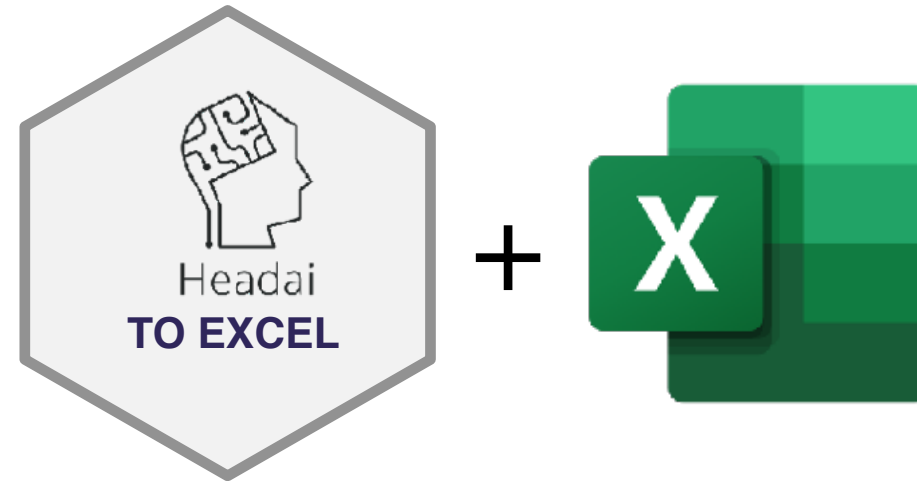



Drone related topics 2019 vs 2024



How skills are connected to tech areas and sectors







Competitor insights

Skills demand per role

Skills foresight

Marketing Managers 2024

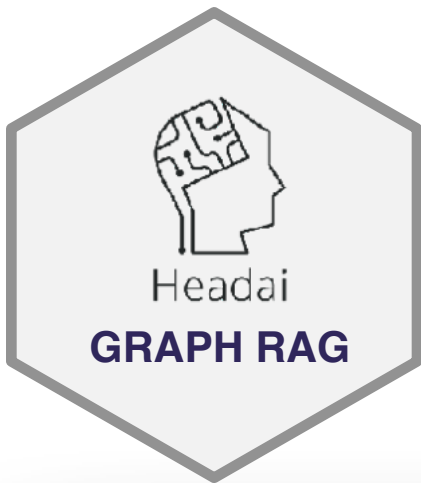
Latest skills demand based on job ads	business development	cloud development	cloud migration	cloud services	business technologies	artificial intelligence	relationship building	financial services	service development	managed services	product management	relationship management	cloud management	sales development	customer service	sales process	building management	problem solving	product marketing	public cloud	interpersonal communications
product manager	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
cloud product manager	102	102	75	56	51	26	50	50	50	50	0	27	29	25	27	25	25	25	0	25	25
product manager general	3	0	0	2	6	15	0	1	0	0	32	0	1	2	0	0	0	4	9	2	2
product development manager	0	0	0	0	0	8	4	1	0	0	4	4	0	4	1	4	4	0	0	0	0

© Headai 2024

The screenshot shows the Headai website interface. At the top, there's a navigation bar with "Competitor insights", "Skills demand per role", and "Skills foresight". Below this is a large table titled "Skills forecast". The table has four rows representing different skill categories and twenty columns representing specific skills or roles. Each column header starts with "business development" and continues through various other business-related terms like "cloud migration", "artificial intelligence", etc., ending with "machine learning".

Skills forecast	business development	cloud development	cloud migration	cloud services	business technologies	artificial intelligence	relationship building	financial services	service development	managed services	product management	relationship management	cloud management	sales development	customer service	sales process	building management	problem solving	product marketing	public cloud	interpersonal communications	machine learning
Skills demand based on job ads	707	324	216	189	89	70	70	69	68	67	59	55	54	53	51	50	46	46	45	41	3	0
AI and genAI investments	0	0	6	0	0	8	0	5	0	0	3	5	0	23	32	32	0	0	5	0	0	707
AI and genAI Research	30	27	21	21	15	12	11	11	10	10	9	8	8	7	7	7	7	7	7	7	7	707

© Headai 2024



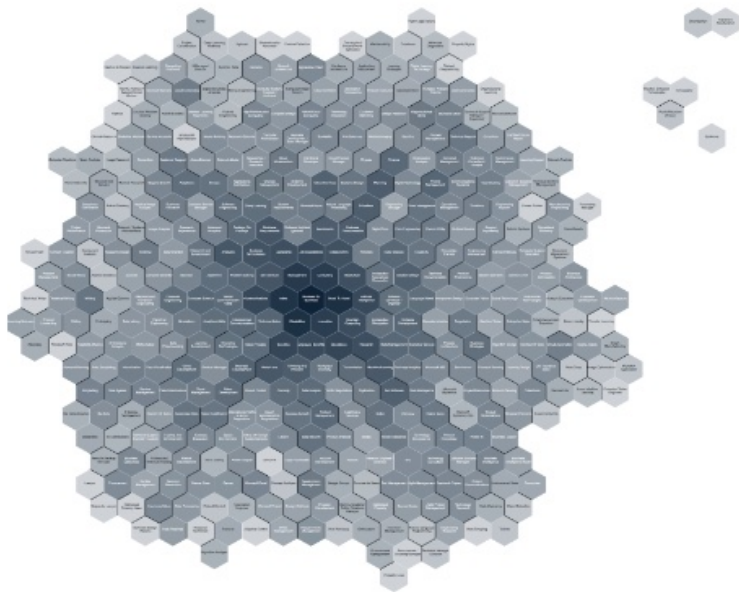
+



Trusted Ecosystem for Skills Forecast

Forecast of Top AI and Generative AI Skills, Investments, and Research

Top AI and Generative AI Skills (2024)



Current Skills Demand:

- 1. Natural Language Processing (NLP):
 - High demand for skills in natural language processing with a focus on creative problem-solving and complex problem-solving.
 - Key areas include natural language understanding, sentiment analysis, and language model development.
- 2. Machine Learning:
 - Significant demand for machine learning skills, particularly in creative problem-solving and complex problem-solving.



Trusted Ecosystem for Skills Forecast

- Essential skills include developing and deploying machine learning models, supervised and unsupervised learning techniques, and model optimization.
- 3. Deep Learning:
 - High demand for deep learning expertise, focusing on model development and optimization.
 - Skills in neural network architectures, convolutional neural networks (CNNs), and recurrent neural networks (RNNs) are particularly valued.
- 4. Computer Vision:



Trusted Ecosystem for Skills Forecast

- Key Focus: The research data provided insights into the latest advancements, ongoing research efforts, and the direction of future studies in AI and Generative AI.

Key Findings

Current Positions and Skills Demand

Marketing Managers

The highest demand is for cloud product managers. These roles require expertise in cloud technologies, artificial intelligence (AI), business development, and strategic planning. Marketing managers with AI and generative AI skills are particularly sought after for their ability to leverage data-driven strategies and optimize marketing efforts using advanced AI tools.

Product Managers

Product managers, including those in marketing and technical roles, need robust AI skills. These include requirement prioritization using AI, customer engagement through AI-driven insights, product data management, network infrastructure, and enterprise marketing. Knowledge of AI-powered product development and market analysis is crucial for these roles.

Marketing Managers 2024																																	
"Latest skills demand based on job ads"		Effect Size (12/70.0)																															
		business_development	cloud_development	cloud_migration	cloud_services	business_technologies	artificial_intelligence	relationship_building	financial_services	service_development	managed_services	product_management	relationship_management	cloud_management	sales_development	customer_service	sales_process	building_management	problem_solving	product_marketing	public_cloud	interpersonal_communications	cloud_infrastructure	change_management	sales_qualification	solution_architecture	cloud_technologies	emerging_technologies	data_infrastructure	data_centers	solution_design	application_data	
effect size (12/70.0)		8	8	6	5	4	4	4	4	4	4	4	4	3	3	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	
product_manager		0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
cloud_product_manager		82%	100%	100%	97%	89%	41%	32%	36%	100%	100%	82%	31%	30%	30%	30%	30%	0%	89%	92%	96%	100%	100%	100%	92%	92%	96%	96%	100%	100%	100%	100%	100%
product_manager_general		3%	0%	0%	3%	11%	28%	0%	2%	0%	67%	0%	3%	6%	0%	0%	14%	14%	7%	4%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
product_development_manager		0%	0%	0%	0%	0%	15%	7%	2%	0%	0%	8%	12%	0%	13%	3%	14%	14%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
marketing_manager		2%	0%	0%	0%	0%	7%	0%	0%	0%	0%	17%	0%	0%	7%	0%	0%	0%	59%	4%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
marketing_director		0%	0%	0%	0%	0%	2%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
product_marketing_manager		0%	0%	0%	0%	0%	2%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	17%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
product_marketing_director		2%	0%	0%	0%	0%	4%	0%	0%	0%	0%	10%	0%	0%	7%	0%	0%	0%	41%	4%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
technical_product_manager		0%	0%	0%	0%	0%	2%	0%	0%	0%	0%	4%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%



Skills gaps

Headai Cloud

Feel free to explore and try our APIs in action.

You can:

- Create your own DigitalTwin.
- Compare two different graphs.
- Try our compass.
- Put data in timeline

Align your data with the labor market needs

Ensure your curriculum is future-proofed and engages students

Align your data with internal KPIs or external indicators

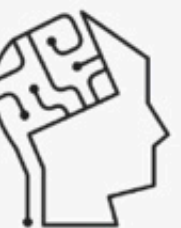
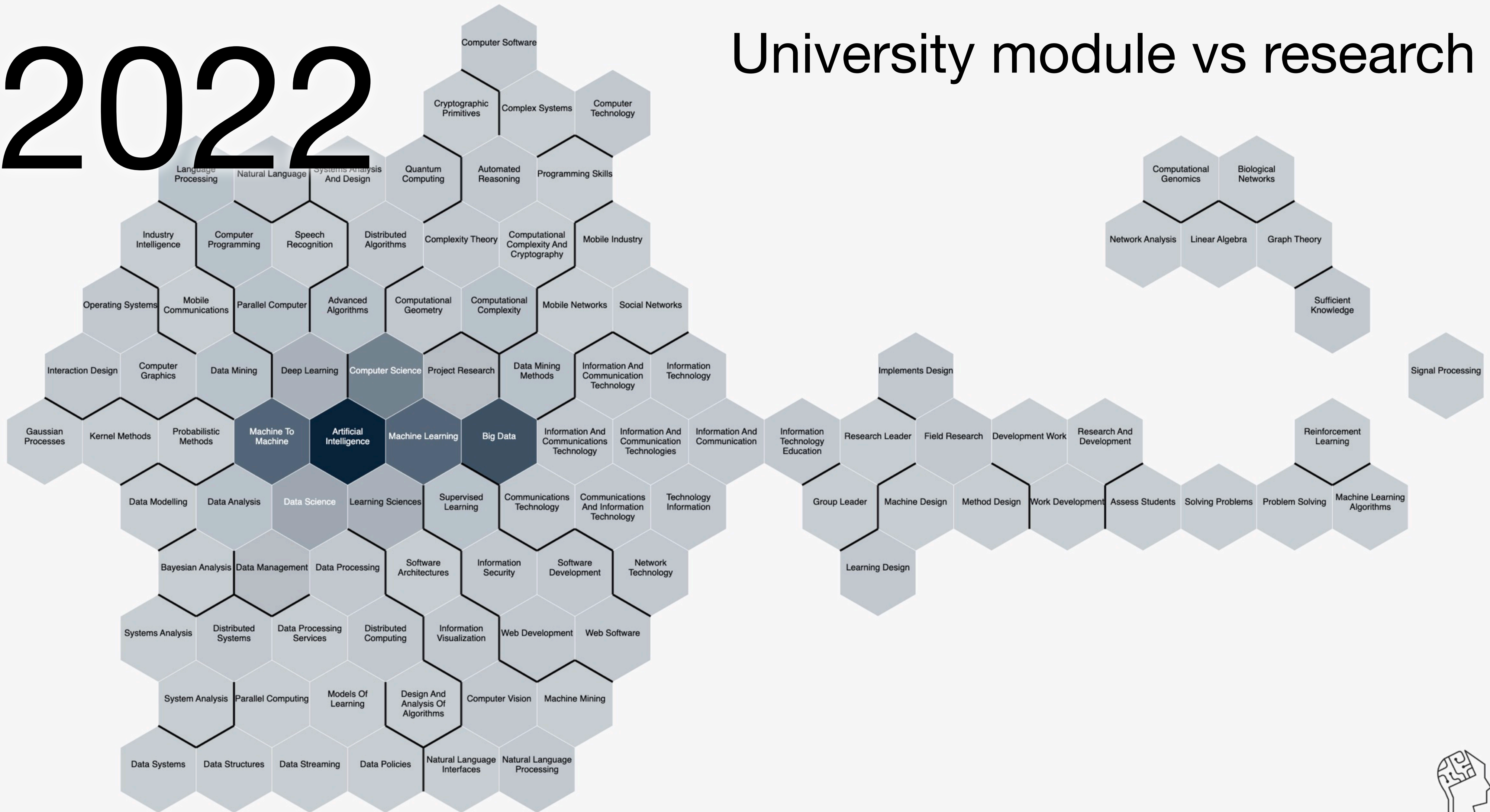
Build custom scorecards

Align your data with UN SDG

Equip students for meaningful contributions to global challenges

2022

University module vs research

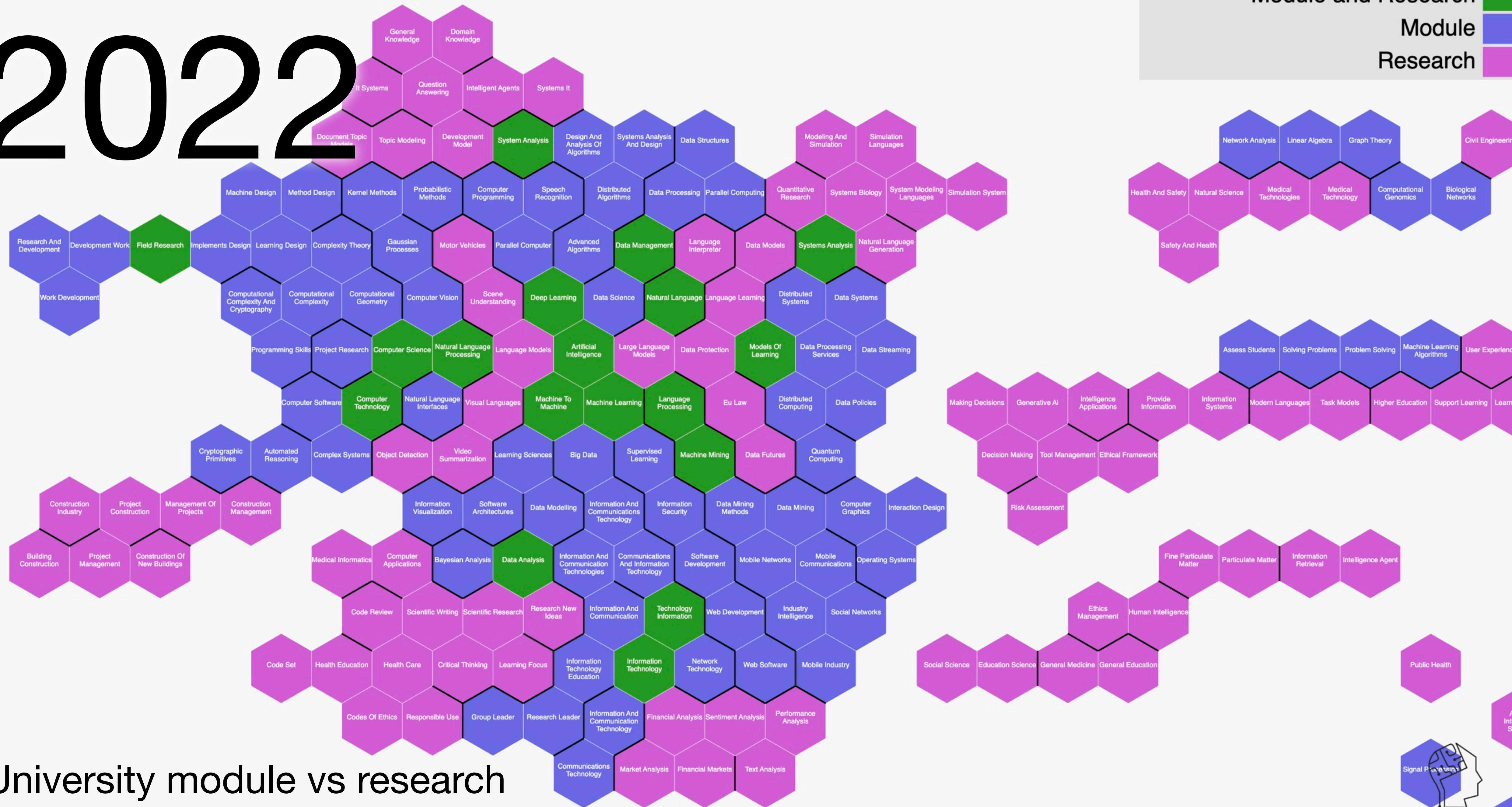


2022

Module and Research

Module

Research



University module vs research

[illegible]

Skills based osint

DATA ACCESSIBILITY

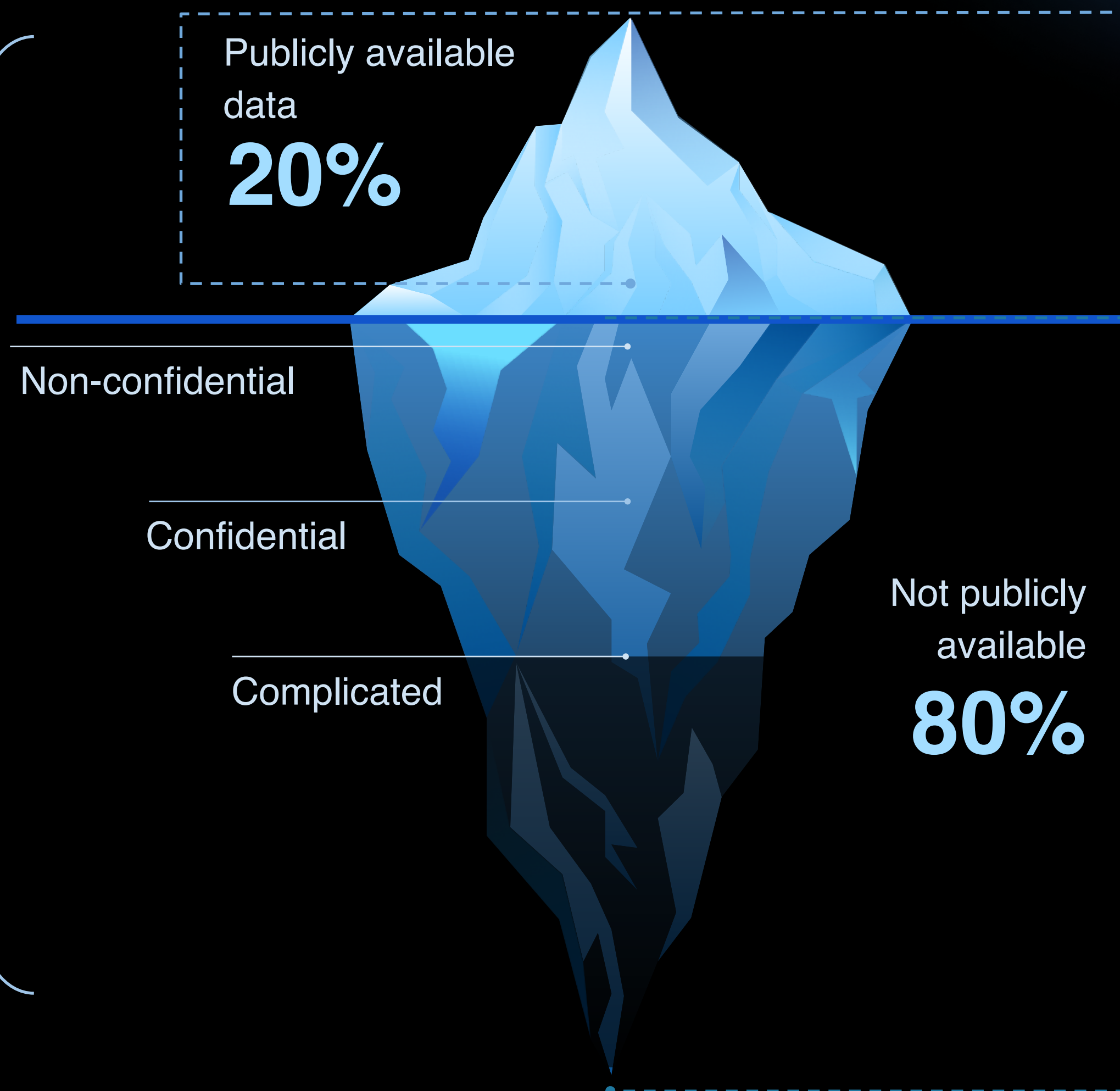


Supply and Demand

- ✓ Job ads
- ✓ Research papers
- ✓ Investments
- ✓ News
- ✓ Public labor market reports
- ✓ Policy collections (eg Green Deal)
- ✓ Patents
- ✓ Curriculum & courses & training

- ✓ *Personal skills data
- ✓ *Corporate workforce analytics
- ✓ *Learning platforms

- Propaganda
- Deep web
- Dark web
- Tor
- I2P



Challenges

- Semantic interoperability
- Governance
- Legal compliance
- Information value

Technologies age Skills are forever

Harri Ketamo
Founder, Headai

