LEADSx2030

From Web Data to Actionable Skills Intelligence:
A Three-Stage Architecture for Europe’s Advanced Digital Skills

Harri Ketamo
Founder, Headai

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LEADSx2030
ADVANCED DIGITAL SKILLS

Version 7.0 — May 2026
Advanced Digital Skills Demand & Supply
10 Tech Areas × 45 Skill Pockets × 3,157 Skills

Choose Your Scenario

Three projection models for Europe's advanced digital skills landscape through 2030.

Each scenario uses the same methodology and skill taxonomy but applies different growth assumptions to demand and supply. Pick the one that matches your planning horizon — or compare them side by side.

⚠

MINIMUM

Conservative Scenario

The lower-bound projection. Assumes slower adoption rates, tighter budgets, and reduced training capacity. Use this scenario for risk planning and worst-case readiness.

~63.7M total demand **2030** horizon

Open dashboard →

◆

MOST LIKELY

Baseline Scenario

The central projection based on current trends in job postings, training pipelines, and EU policy directions. This is the recommended starting point for most analyses.

~90.1M total demand **2030** horizon

Open dashboard →

▲

MAXIMUM

Optimistic Scenario

The upper-bound projection. Assumes accelerated digital transformation, expanded training programs, and aggressive EU investment. Use this for opportunity sizing and ambitious targets.

~302.9M total demand **2030** horizon

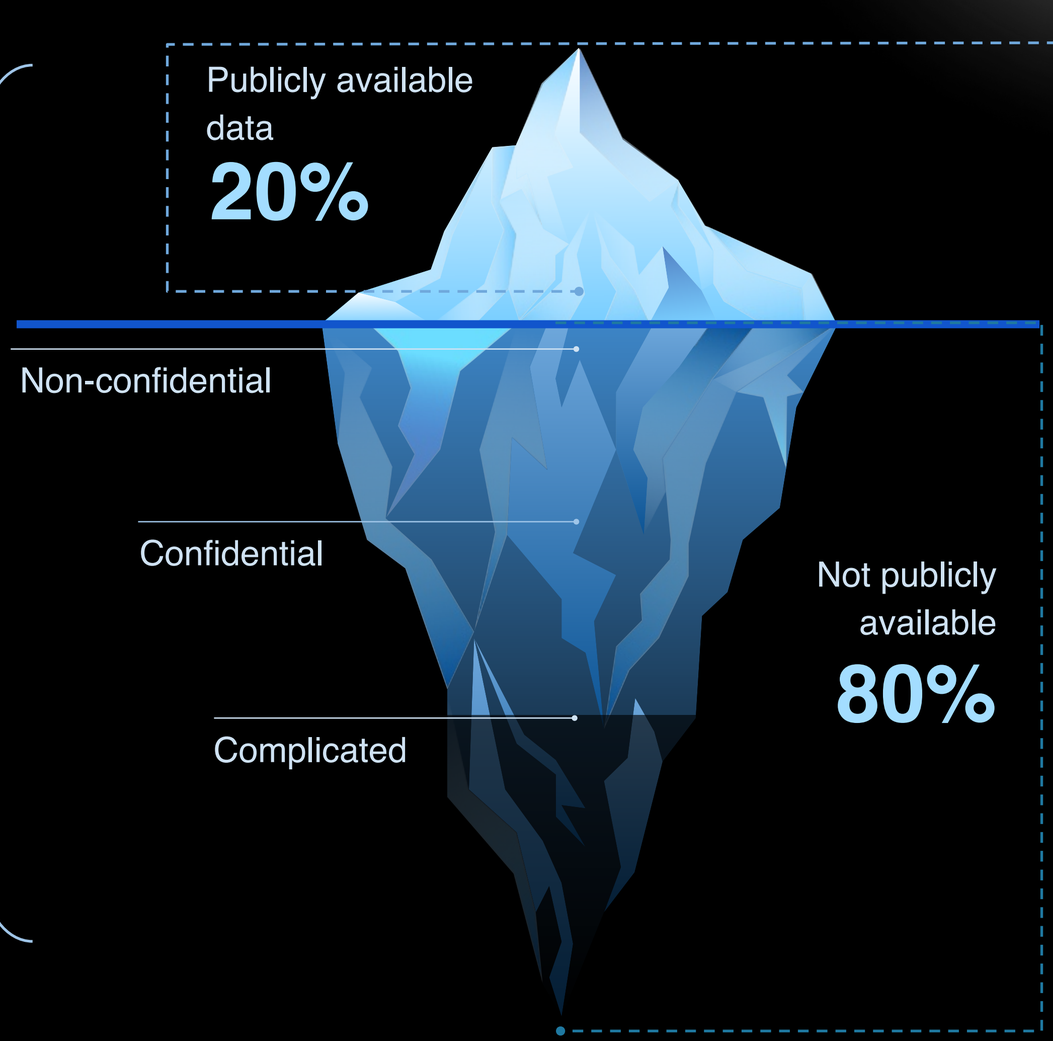
Open dashboard →

Why we need a Semantic Layer?

- ✅ Job ads
- ✅ Research papers
- ✅ Investments
- ✅ News
- ✅ Social media
- ✅ Policy collections
- ✅ Patents
- ✅ Market places

- ✅ Education & Training
- ✅ News (paywall)
- ✅ *Social Media (login)
- ✅ *Personal data
- ✅ *Corporate data
- ✅ *Health Records (patient journals)
- ✅ *Banking & insurance

- ☐ Illegal market places
- ☐ Behaviour data
- ☐ Unofficial banking
- ☐ Whistleblowing
- ☐ Dark web
- ☐ Tor
- ☐ I2P



Headai

Challenges
Semantic interoperability
Governance
Legal compliance
Information value
Trust value

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Headai Space - Semantic Data Platform

- ✅ Job ads
- ✅ Research papers
- ✅ Investments
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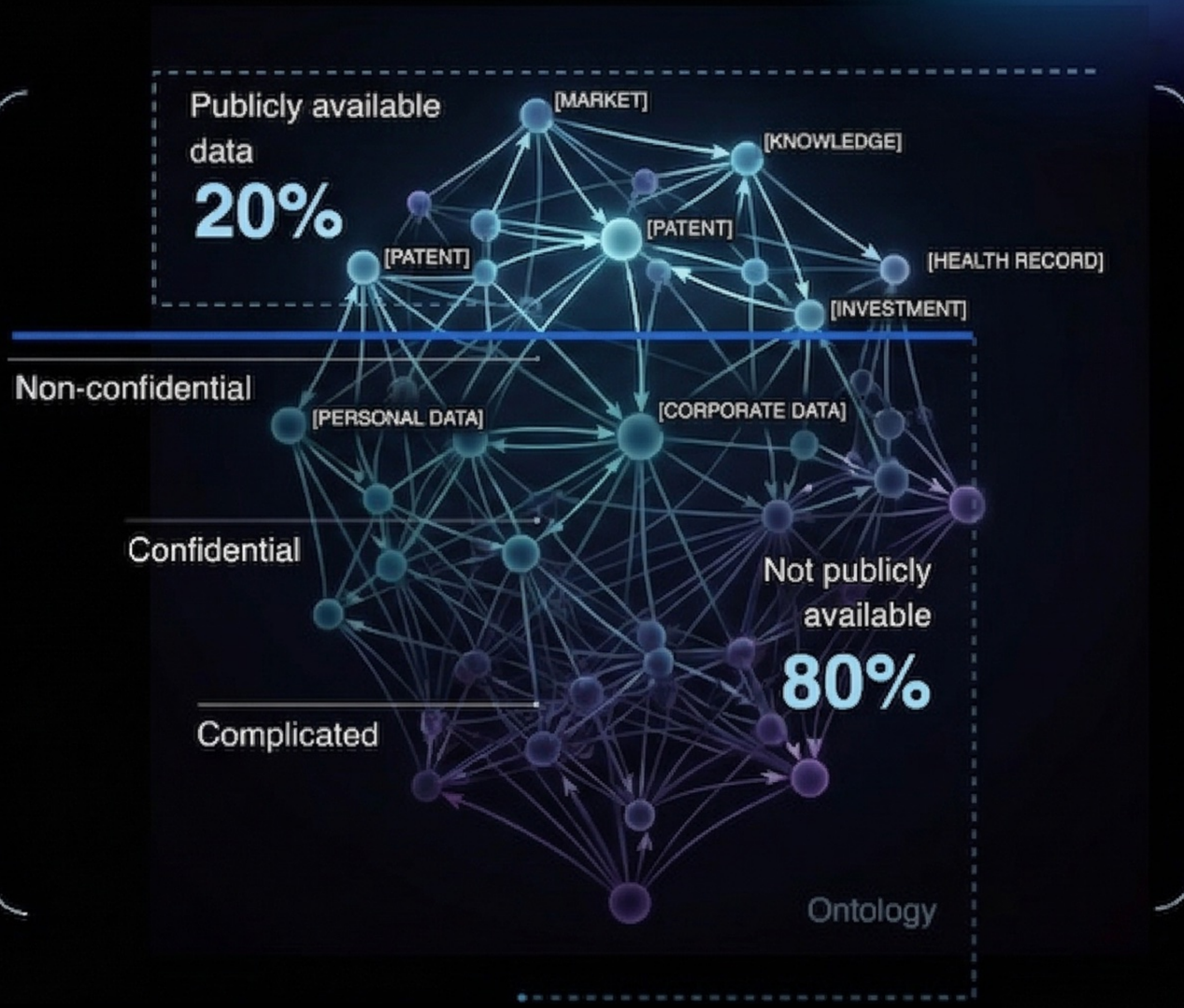

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Semantic interoperability
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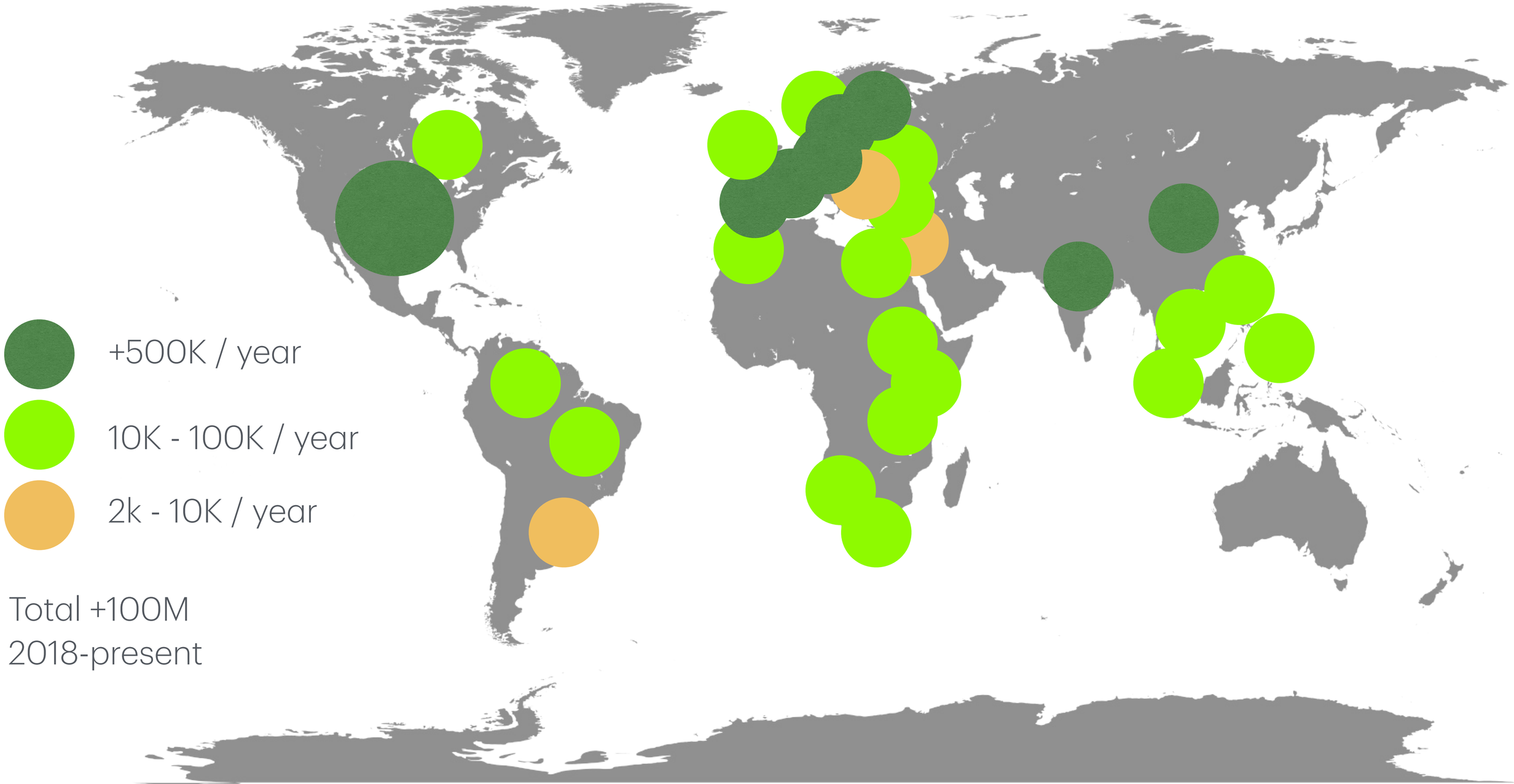
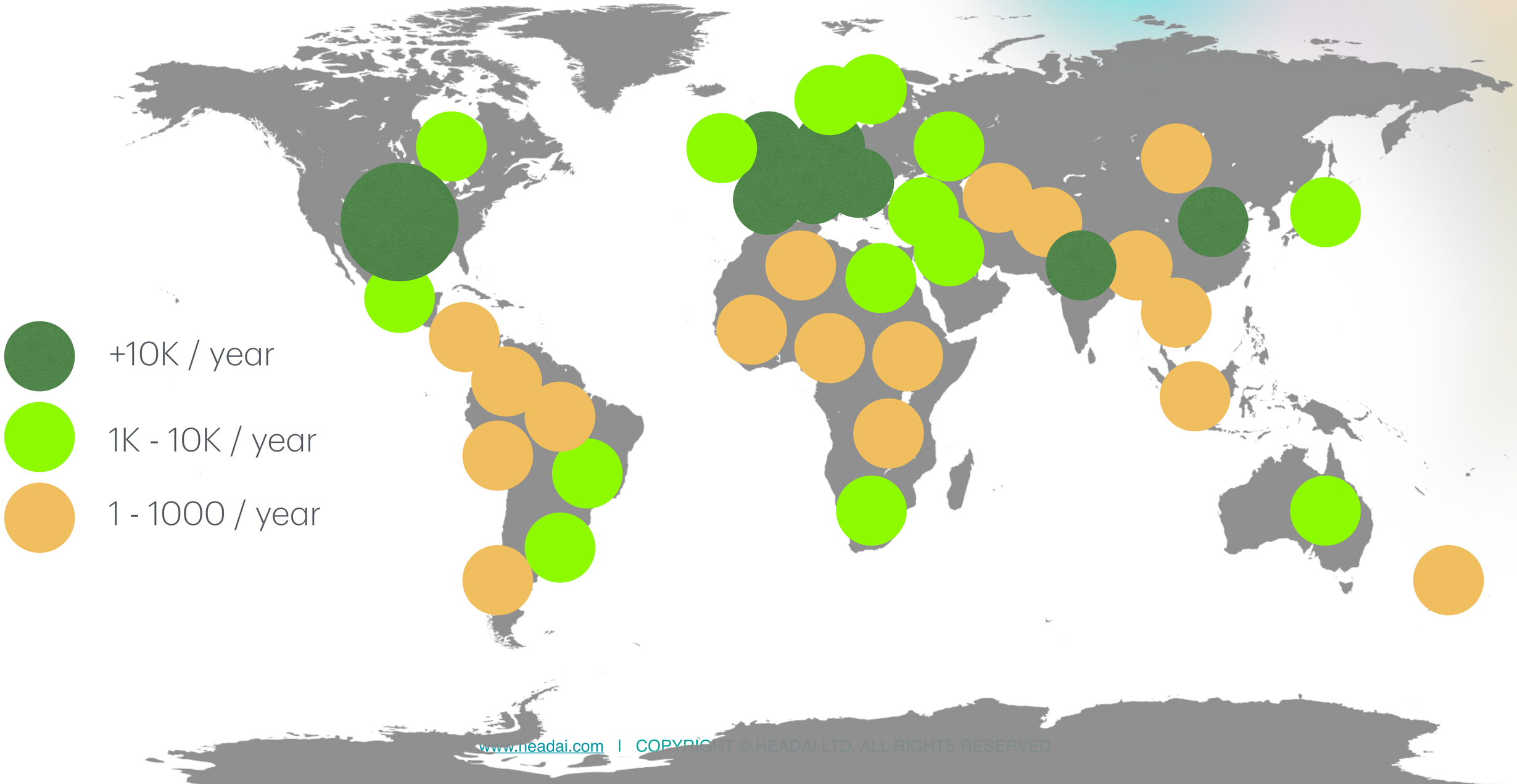
Job ads - sample data size



Total +100M
2018-present

Research articles - sample data size



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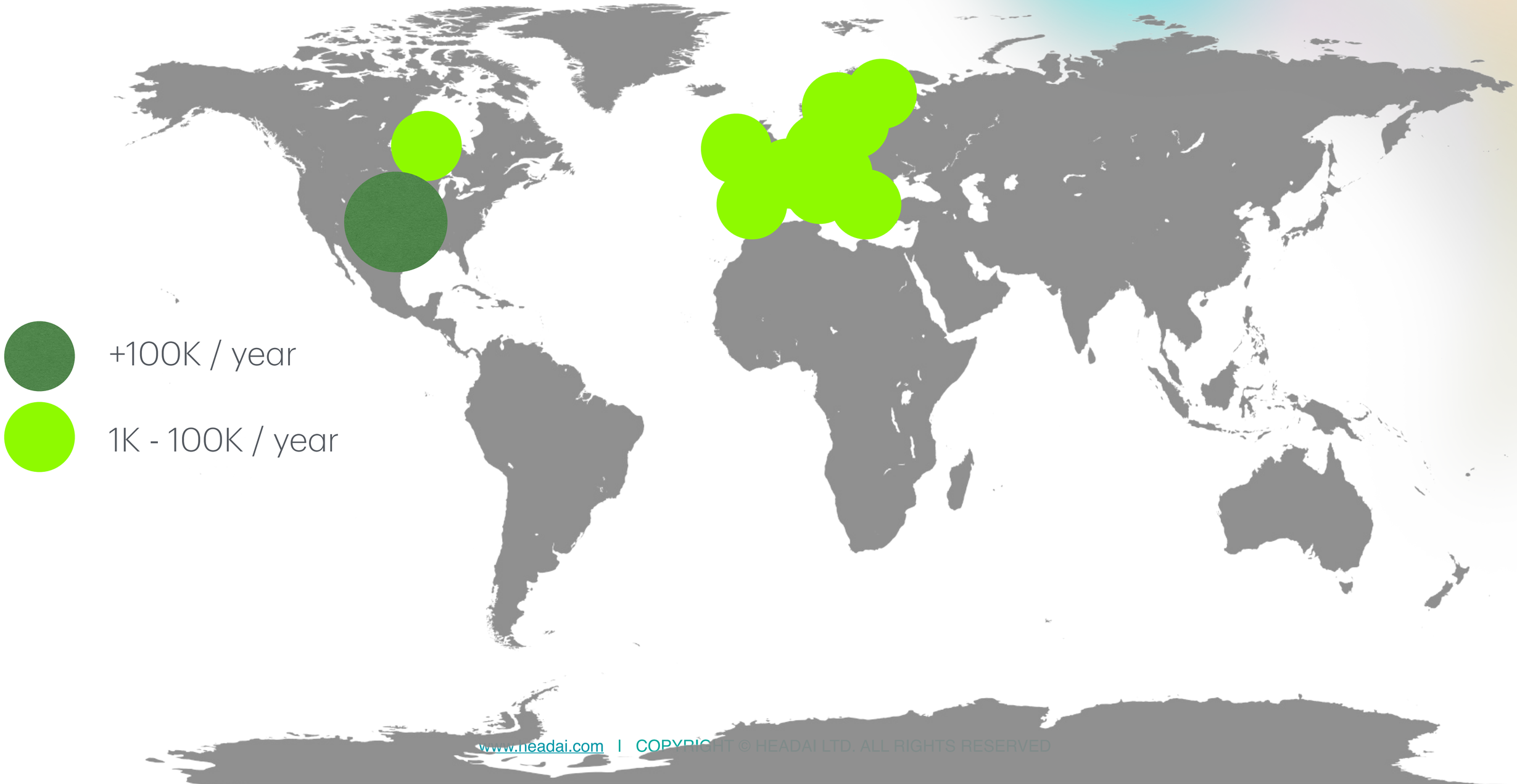
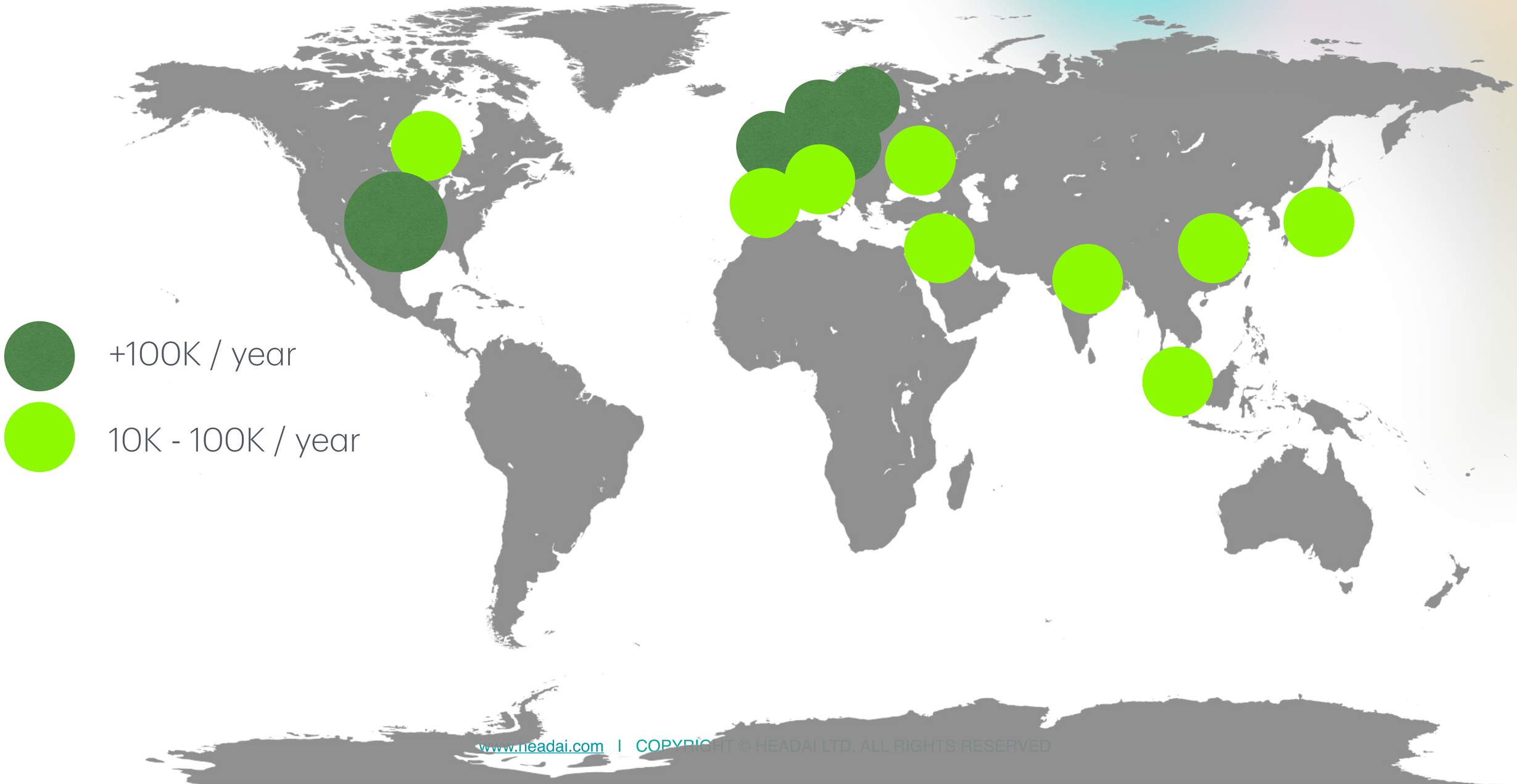
Investments - sample data size



Economics & tech news - sample data size



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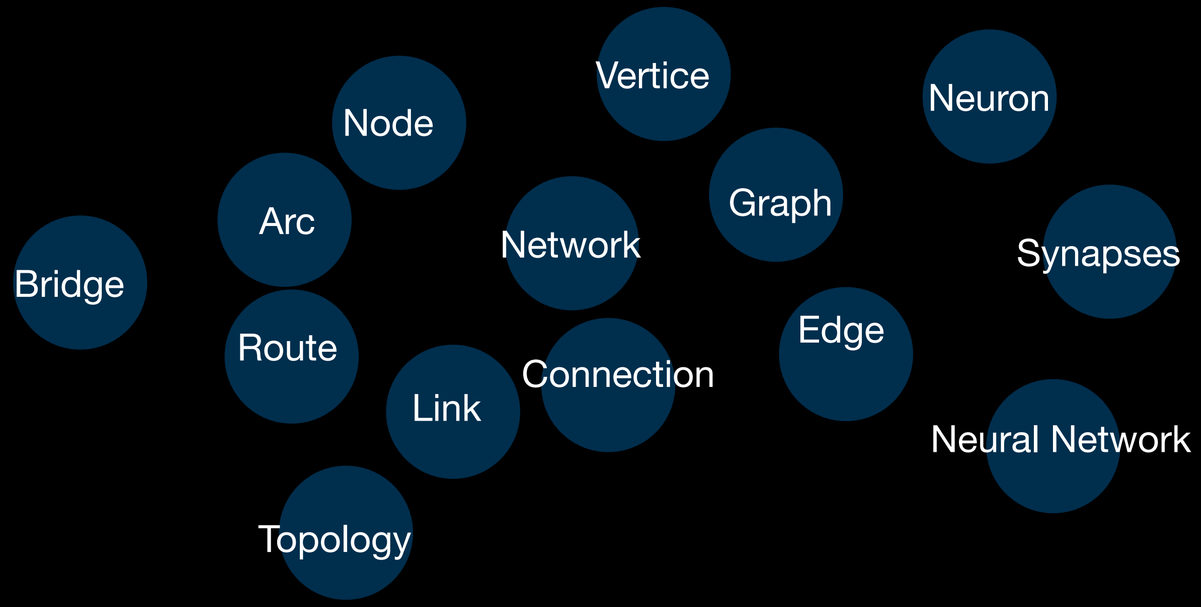
Skills - tools - small items ...



Linguistics

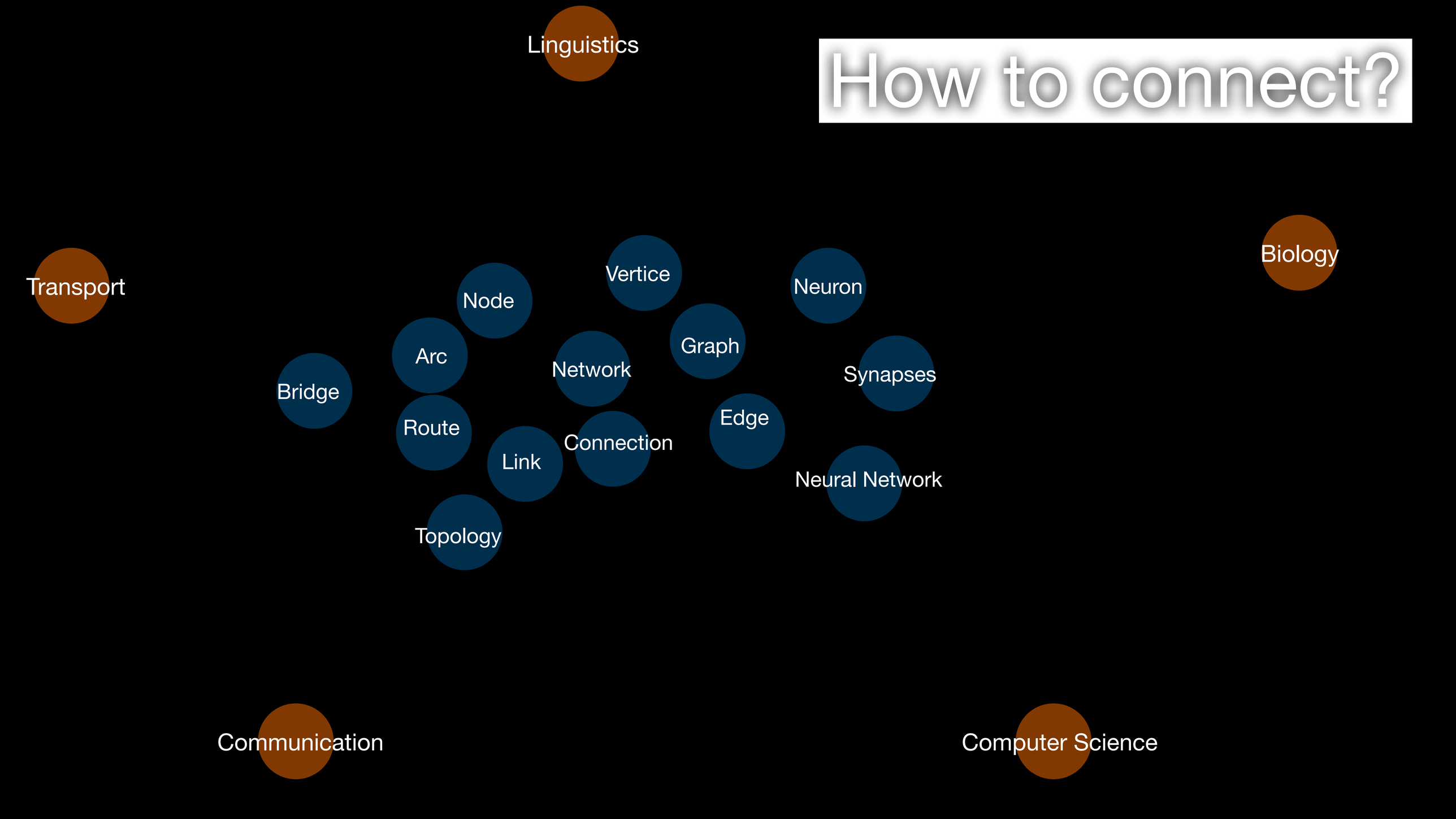
Biology

Transport

High-level topics

Communication

Computer Science


Linguistics
How to connect?
Transport
Biology
Vertice
Node
Neuron
Graph
Arc
Network
Synapses
Bridge
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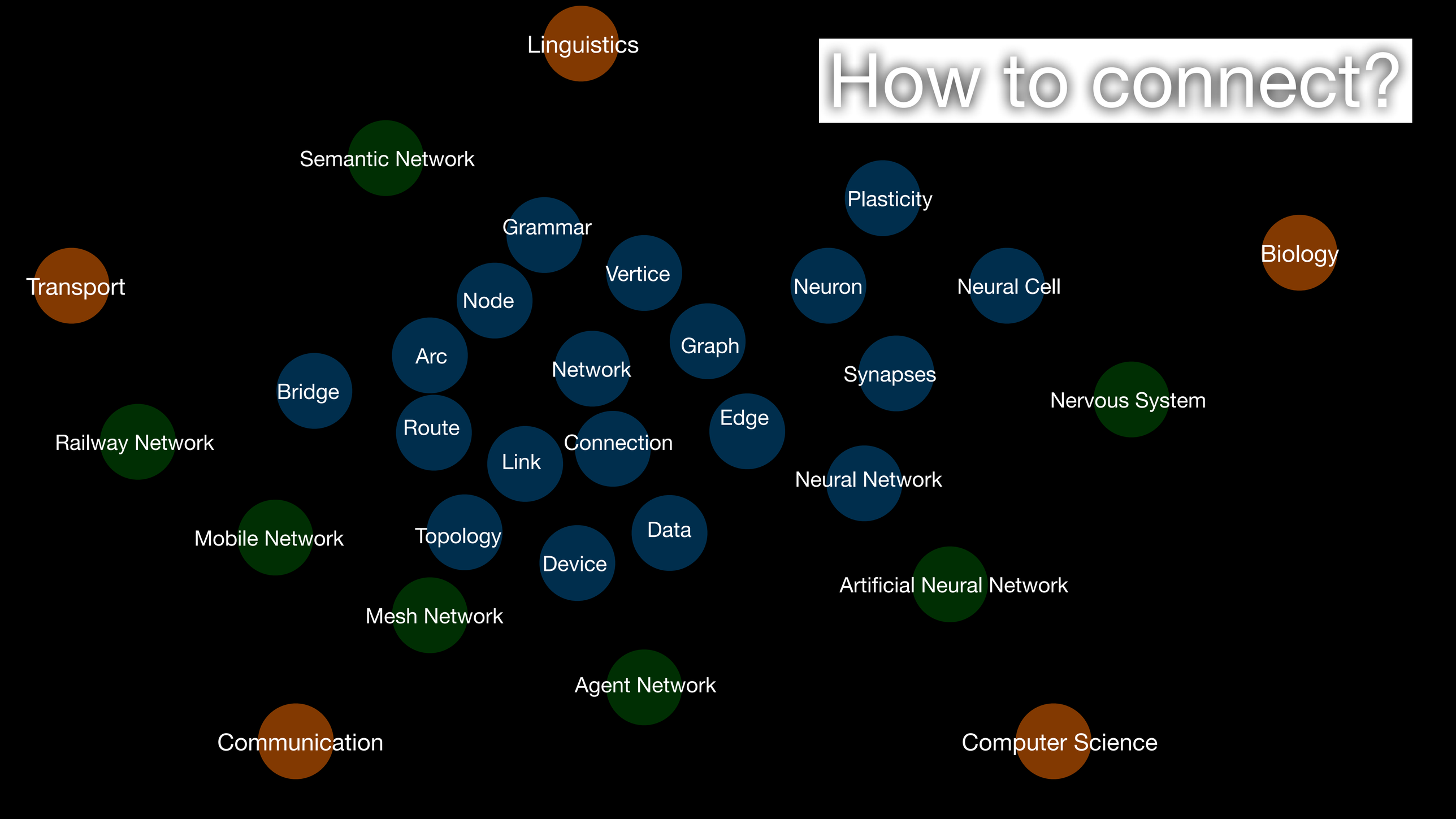
Link
Neural Network
Topology
Communication
Computer Science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Agent Network
Communication
Plasticity
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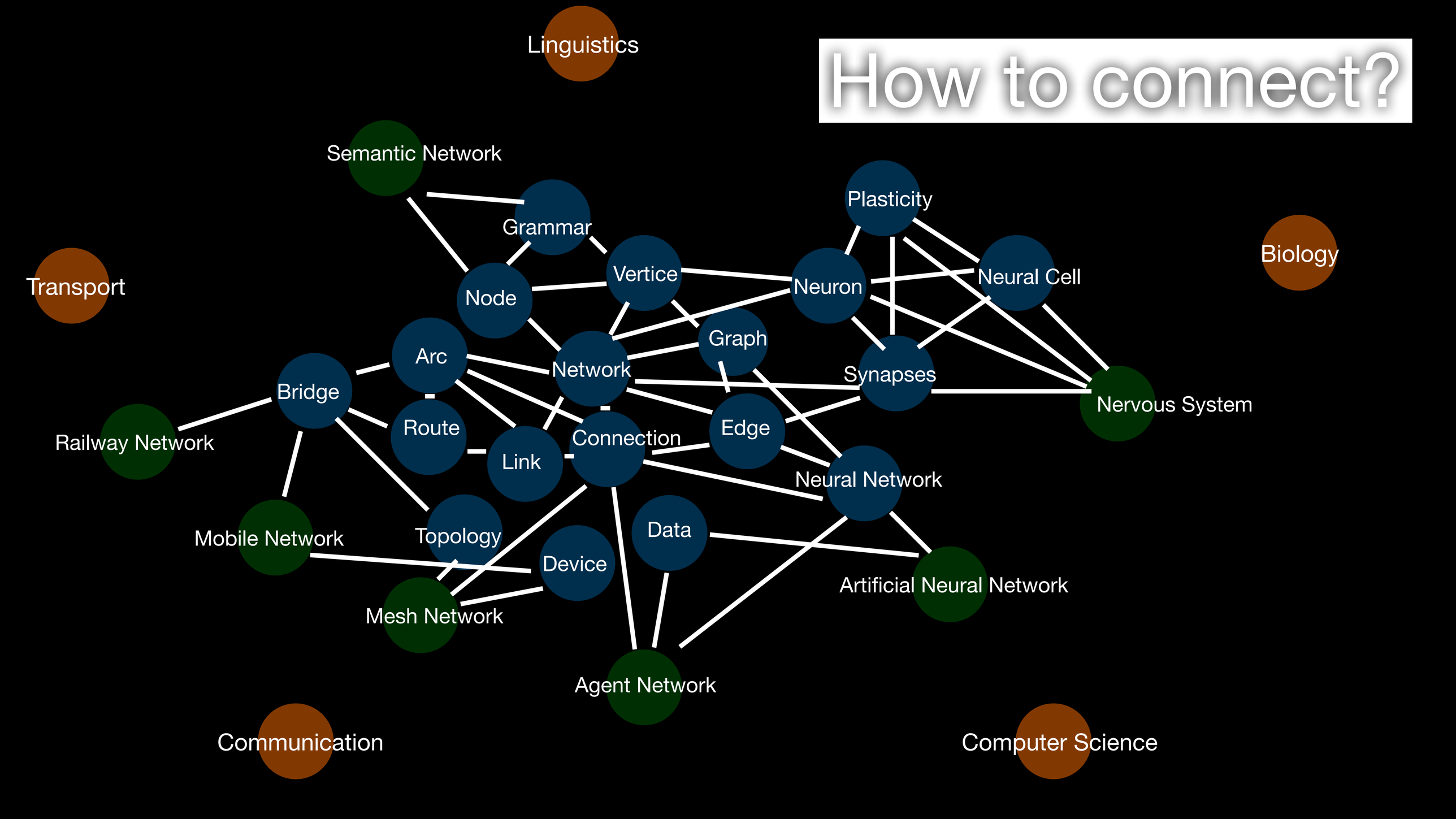
Neuron
Neural Cell
Synapses
Nervous System
Neural Network
Artificial Neural Network
Computer Science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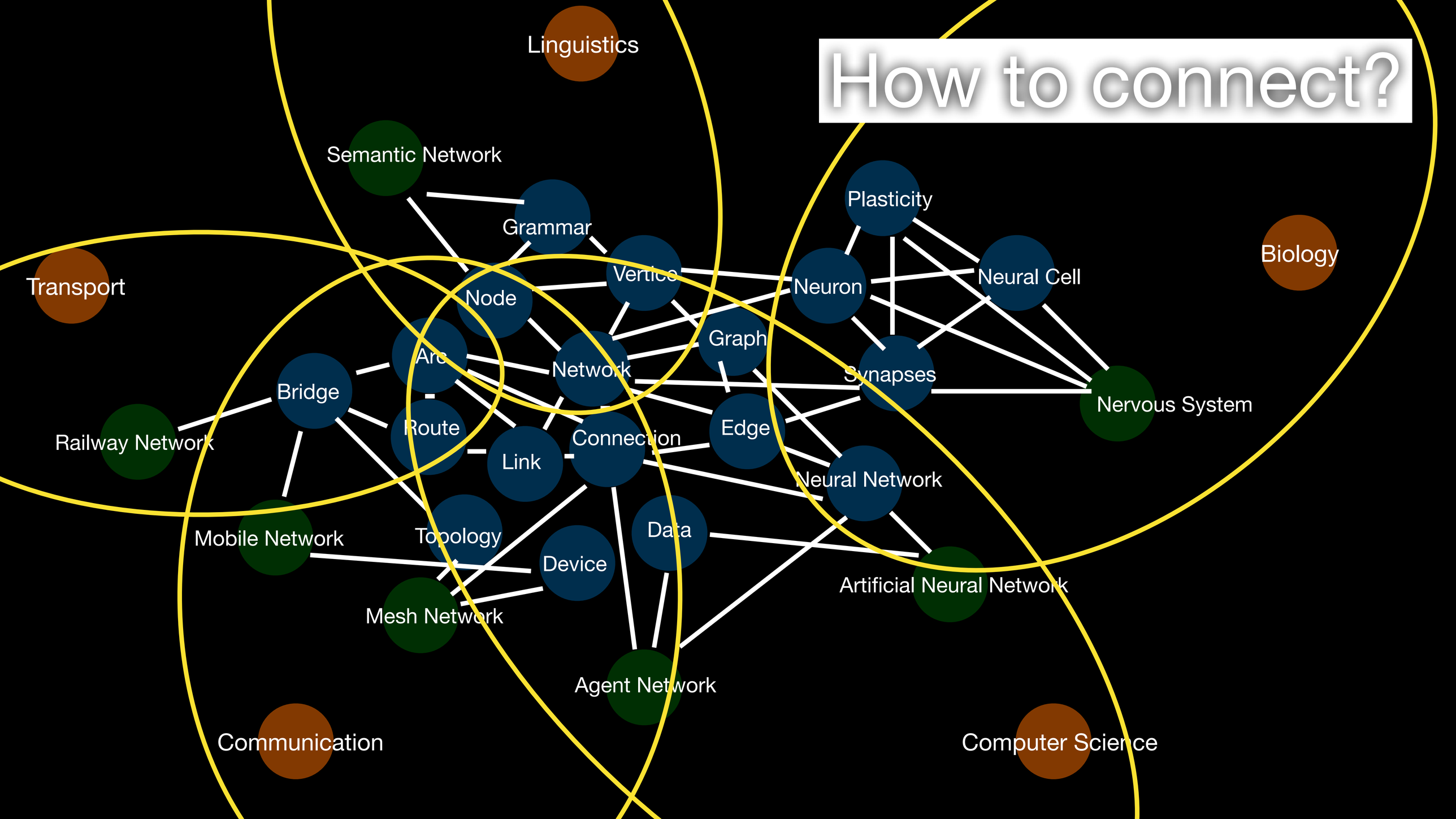
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How to connect?

Semantic Network

Skills pockets

Nervous System

Railway Network

Mobile Network

Artificial Neural Network

Mesh Network

Agent Network

LEADSx2030
ADVANCED DIGITAL SKILLS

◆ MOST LIKELY SCENARIO

THE STORY
The Challenge
What Europe Needs
The Training Pipeline
The Gap
Where to Act

EXPLORE
Tech Areas
Demand Trends
Skill Pockets Flow
Skills Explorer

✦ The Story Arc

← Back to Scenarios

What the Data Most Likely Tells Us

Most Likely Scenario — Advanced Digital Skills Across Europe

Based on linear growth tracked from the numbers — closer to the minimum than the maximum. This is the most realistic projection of Europe's advanced digital skills demand, balancing observable growth trends without over-extrapolation.

THE PIPELINE: FROM SIGNALS TO EU SCALE

3M+ job ads → AI classification → 200K+ advanced digital skills roles → EU-wide projection to 420K roles

DATA RULES

RULE 1 **Skill pockets are always tied to a tech area.** The same pocket (e.g. "Machine Learning") has a different demand value under "Artificial Intelligence" than under "Data Science." You must always select a tech area to see pocket-level data. Pocket values are never summed across tech areas.

RULE 2 **Skills always have one fixed value.** The same skill has the same demand and supply value regardless of which tech area or pocket it appears in. Skill values are never summed or aggregated — each skill is counted once.

RULE 3 **Tech area demand is the unit of comparison.** To see how big a tech area is, look at the Tech Areas page. To see pockets within that tech area, select it first. To see individual skills, select both a tech area and a pocket.

Version 7.0 — May 2026 — Most Likely Scenario
Data: May 4, 2026

What Europe Needs

Skill pockets ranked by demand within a tech area

◆ MOST LIKELY SCENARIO

THE STORY
The Challenge
What Europe Needs
The Training Pipeline
The Gap
Where to Act

EXPLORE
Tech Areas
Demand Trends
Skill Pockets Flow
Skills Explorer
✦ The Story Arc

← Back to Scenarios

o see pocket-level demand. Pockets always belong to a tech area — values differ per tech area.

← Select a Tech Area
Artificial Intelligence
Automated System
Blockchain
Cloud Computing
✓ Cybersecurity
Data Science
Edge Computing
Internet Of Things
Robotics

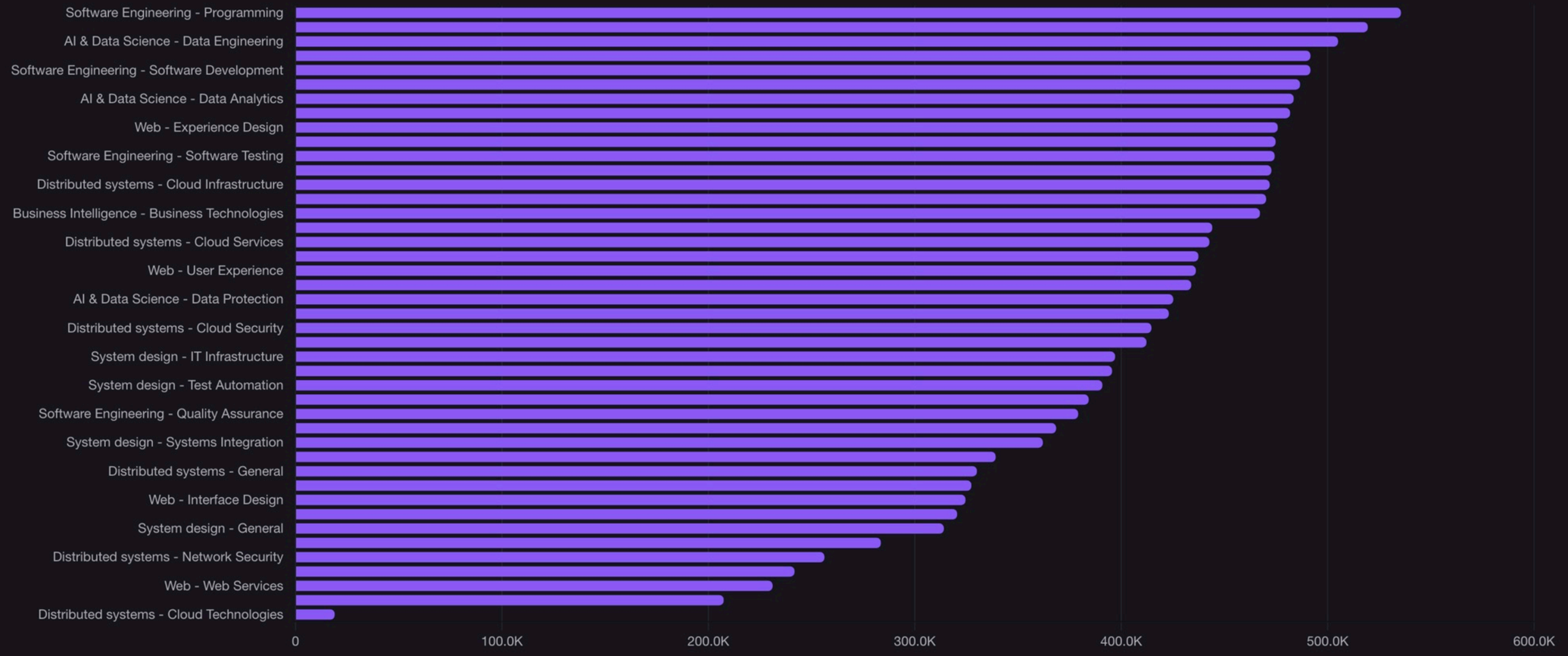
RE IN HIGHEST DEMAND?

YEAR

2022 2023 2024 2025 2026 2027 2030

L DEMAND (2026)

43
SKILL POCKETS



The Training Pipeline

Supply per pocket within a tech area

WHERE DOES TRAINING GO?

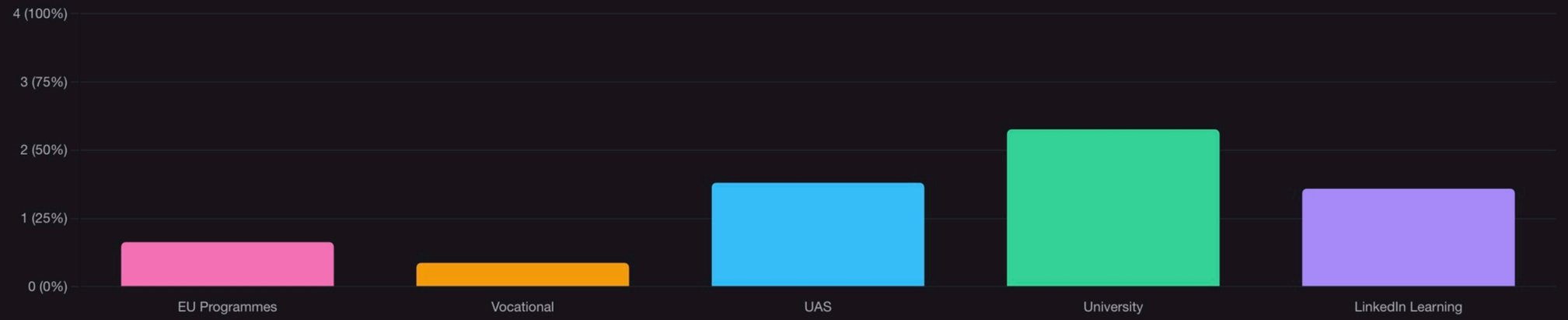
TECH AREA (REQUIRED)

Automated System

SUPPLY INDEX 0 = no training, 1 = 25%, 2 = 50%, 3 = 75%, 4 = 100% of demand. Each channel is shown separately — never summed.

0.7	0.3	1.5	2.3	1.4
EU PROGRAMMES (~16%)	VOCATIONAL (~9%)	UAS (~38%)	UNIVERSITY (~58%)	LINKEDIN LEARNING (~36%)

AVERAGE SUPPLY INDEX BY CHANNEL



SUPPLY COVERAGE HEATMAP — ALL POCKETS × CHANNELS

Skill Pocket	EU Programmes	Vocational	UAS	University	LinkedIn Learning
Business Intelligence - SAP/ERP	0	0	1	0	0
Business Intelligence - Business Software	0	0	1	1	1
System design - System Administration	0	0	1	1	1
System design - System Testing	0	0	1	1	1
System design - Test Automation	0	0	1	1	1
Distributed systems - Cloud Infrastructure	1	0	1	1	2
Software Engineering - Devops	0	0	1	1	3

LEADSx2030 ADVANCED DIGITAL SKILLS

◆ MOST LIKELY SCENARIO

THE STORY
- The Challenge
- What Europe Needs
- The Training Pipeline
- The Gap
- Where to Act

EXPLORE
- Tech Areas
- Demand Trends
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- Skills Explorer
- ✦ The Story Arc

← Back to Scenarios

Are We Training the Right Skills?

Each row shows one skill pocket. For each supply channel, a coloured bar shows coverage as a percentage of demand (100%). Red/orange bars (index 0–1) signal critical gaps where training barely exists.

TECH AREA (REQUIRED): Artificial Intelligence

YEAR: 2022 | 2023 | 2024 | 2025 | **2026** | 2027 | 2030

SORT: **Most gaps** | Demand | Name

0 — No training · 1 — 25% coverage · 2 — 50% coverage · 3 — 75% coverage · 4 — 100% coverage

EU Programmes · Vocational · UAS · University · LinkedIn Learning

38	9	29	0
POCKETS IN ARTIFICIAL INTELLIGENCE	CRITICAL (3+ GAPS)	SOME GAPS (1–2)	WELL COVERED

SKILL POCKET	DEMAND	EU PROGRAMMES	VOCATIONAL	UAS	UNIVERSITY	LINKEDIN LEARNING
System design - Industrial Automation	240.8K	0	0	1	2	0
AI & Data Science - Data Engineering	475.5K	0	0	2	1	3
Software Engineering - Software Development	468.5K	1	0	4	1	3
Software Engineering - Devops	446.0K	0	0	1	2	4
Software Engineering - Software Testing	435.5K	1	1	3	4	1
AI & Data Science - Information Security	380.5K	1	1	1	4	3
Business Intelligence - Digital Transformation	364.6K	1	0	1	3	2
System design - Technology Management	353.6K	0	0	3	4	0
Distributed systems - Cloud Security	351.5K	0	0	1	2	4
Software Engineering - Programming	507.9K	1	0	2	4	4
Software Engineering - General	490.2K	1	2	4	2	1
Distributed systems - Cloud Services	482.5K	1	0	2	3	4
Distributed systems - Cloud Technologies	482.5K	1	0	3	3	4

Where to Act

Actionable insights per tech area

RULE Supply is rated on a **0–4 index** (0 = no training, 1 = 25%, 2 = 50%, 3 = 75%, 4 = 100% of demand). **Where to act = high demand + low supply.** Channels scoring **0 or 1** out of 4 mean training is absent or minimal. Focus investment where demand is high and most channels show red (0) or low (1) scores.

TECH AREA (REQUIRED)

Automated System

Critical Gaps (2+ channels at 0-1)

- Business Intelligence - Business Software (5 low, demand 210.1K)
- System design - System Testing (5 low, demand 187.0K)
- System design - Test Automation (5 low, demand 187.0K)
- System design - System Administration (5 low, demand 124.5K)
- Business Intelligence - SAP/ERP (5 low, demand 89.8K)

Urgent: ALL Channels Low

- Business Intelligence - Business Software (demand 210.1K)
- System design - System Testing (demand 187.0K)
- System design - Test Automation (demand 187.0K)
- System design - System Administration (demand 124.5K)
- Business Intelligence - SAP/ERP (demand 89.8K)

Fastest Growing 2026→2030

- System design - General (+151.9K)
- Web - Experience Design (+151.9K)
- Software Engineering - Programming (+98.6K)
- AI & Data Science - Machine Learning (+96.5K)
- Software Engineering - Information Systems (+68.3K)

Strong Pipeline (3+ channels at 3-4)

None in this category

INVESTMENT PRIORITY: TOP POCKETS × SUPPLY CHANNELS (0-4 INDEX)

Skill Pocket	Demand	EU Programmes	Vocational	UAS	University	LinkedIn Learning
Software Engineering - Programming	328.8K	1	0	2	4	3
Software Engineering - Devops	254.9K	0	0	1	1	3
System design - General	253.2K	1	1	2	4	1
Web - Experience Design	253.2K	1	1	2	4	1
Software Engineering - Software Development	240.0K	1	0	2	3	2
AI & Data Science - Data Management	228.7K	1	1	2	3	2
Software Engineering - Information Systems	227.7K	1	0	2	3	1
System design - Systems Integration	220.9K	0	0	1	3	1
System design - Systems Engineering	220.1K	1	0	2	3	1
Business Intelligence - Business Software	210.1K	0	0	1	1	1
Software Engineering - Software Testing	205.2K	1	1	1	3	1
Distributed systems - Cloud Technologies	199.6K	1	0	1	2	2
AI & Data Science - Knowledge Management	197.9K	1	1	2	3	1
AI & Data Science - Information Security	194.9K	1	1	2	2	1

Demand Trends

How skill pockets evolve within a tech area

RULE Select a **Tech Area** to see pocket trends. Pocket demand is always shown within one tech area context.

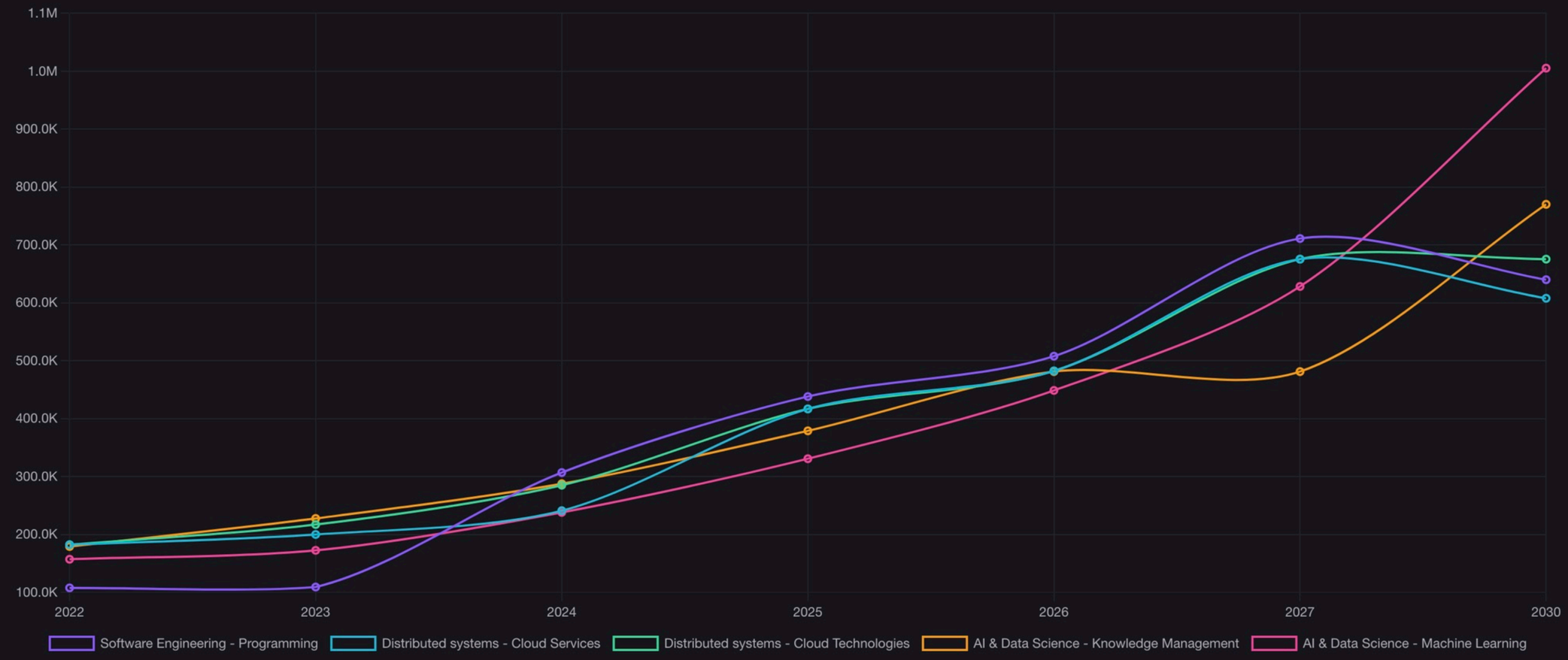
HOW ARE SKILL POCKETS EVOLVING?

TECH AREA (REQUIRED)

Artificial Intelligence

SELECT UP TO 6 POCKETS (CLICK TO TOGGLE)

Software Engineering - Programming
Software Engineering - General
Distributed systems - Cloud Services
Distributed systems - Cloud Technologies
AI & Data Science - Knowledge Management
AI & Data Science - Data Engineering
Web - Experience Design
Software Engineering - Software Development
AI & Data Science - Data Analytics



Demand Trends

How skill pockets evolve within a tech area

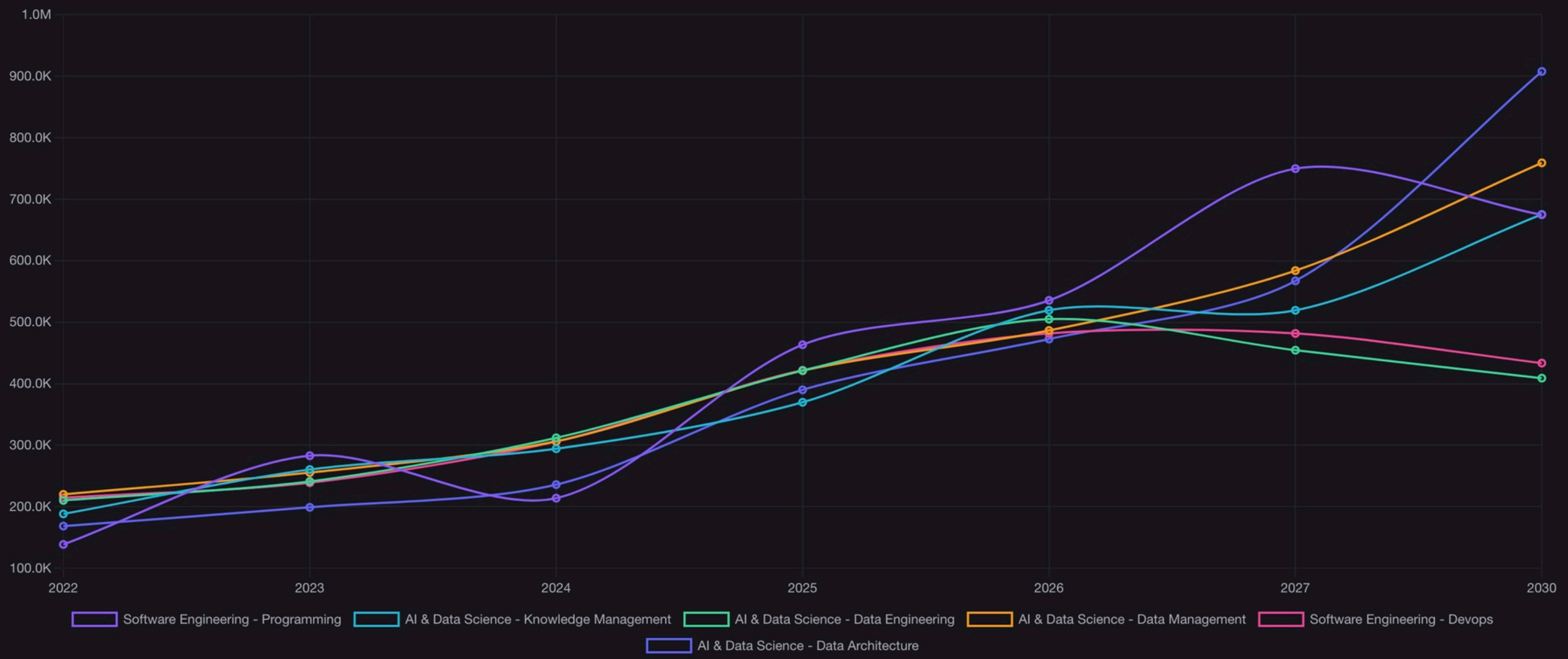
HOW ARE SKILL POCKETS EVOLVING?

TECH AREA (REQUIRED)

Cybersecurity

SELECT UP TO 6 POCKETS (CLICK TO TOGGLE)

Software Engineering - Software Development
AI & Data Science - Data Management
AI & Data Science - Data Analytics
Software Engineering - Devops
Web - Experience Design
AI & Data Science - Information Security
Software Engineering - Software Testing
AI & Data Science - Data Architecture
Distributed systems - Cloud Infrastructure



Skill Pockets Flow

How tech areas connect to skill pockets

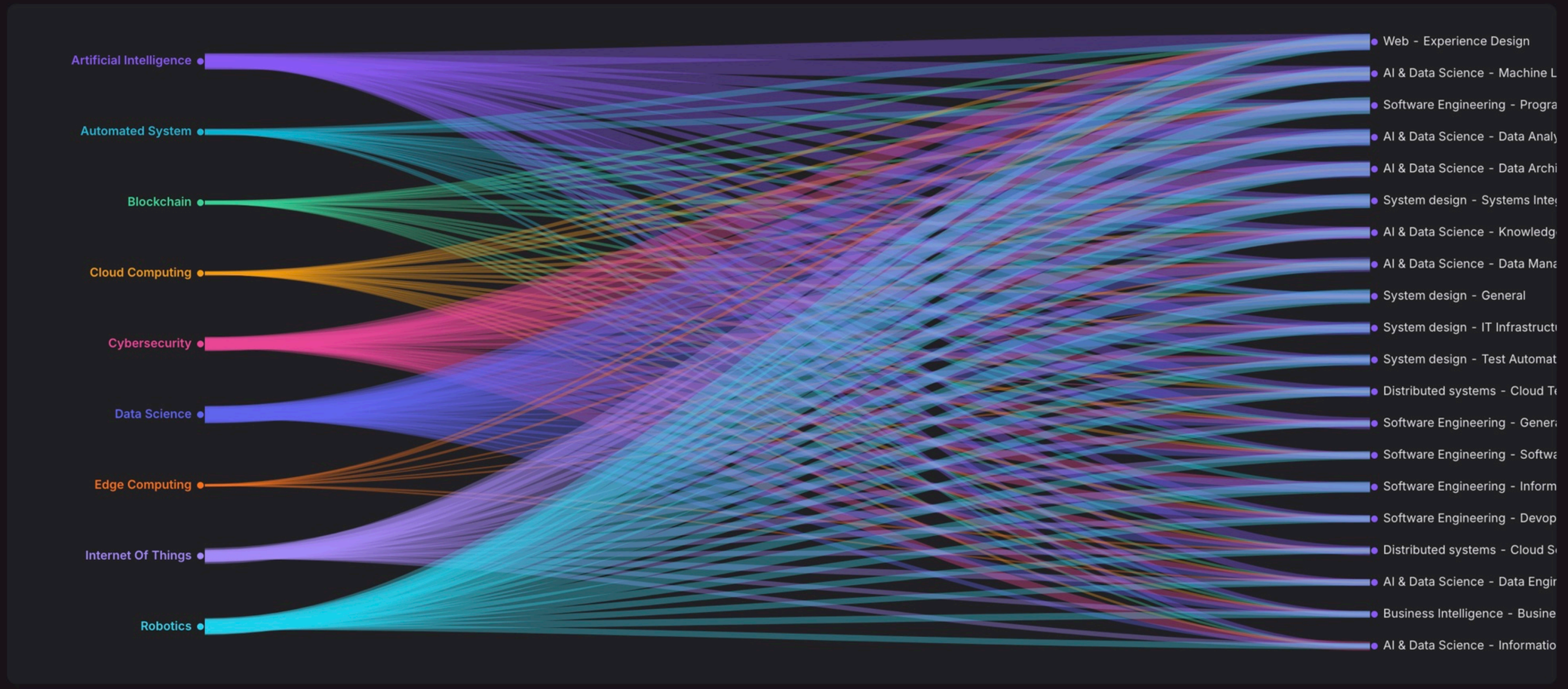
HOW DO TECH AREAS CONNECT TO SKILL POCKETS?

YEAR

2022 | 2023 | 2024 | 2025 | 2026 | 2027 | 2030

HIGHLIGHT

All (hover to highlight)



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Skills Explorer

Individual skills — one fixed value each

RULE Skills always have on of context. Select a Tech Area, then a Pocket to see which skills it contains.

WHAT INDIVIDUAL SKILLS

TECH AREA (REQUIRED)

Artificial Intelligence

← Select a pocket
AI & Data Science - Data Analytics
AI & Data Science - Data Architecture
AI & Data Science - Data Engineering
AI & Data Science - Data Management
AI & Data Science - Data Protection
✓ AI & Data Science - Data Security
AI & Data Science - Information Security
AI & Data Science - Knowledge Management
AI & Data Science - Machine Learning
Business Intelligence - Business Analytics
Business Intelligence - Business Software
Business Intelligence - Business Technologies
Business Intelligence - Digital Transformation
Distributed systems - Cloud Infrastructure
Distributed systems - Cloud Security
Distributed systems - Cloud Services
Distributed systems - Cloud Technologies
Distributed systems - Network Security
Software Engineering - Devops
Software Engineering - General
Software Engineering - Programming
Software Engineering - Quality Assurance
Software Engineering - Software Development
Software Engineering - Software Testing
System design - General
System design - IT Infrastructure
System design - Industrial Automation
System design - Process Automation
System design - Security Management
System design - Systems Engineering
System design - Systems Integration
System design - Technology Management
System design - Test Automation
Web - Digital Media
Web - Experience Design
Web - Interface Design
Web - User Experience

YEAR

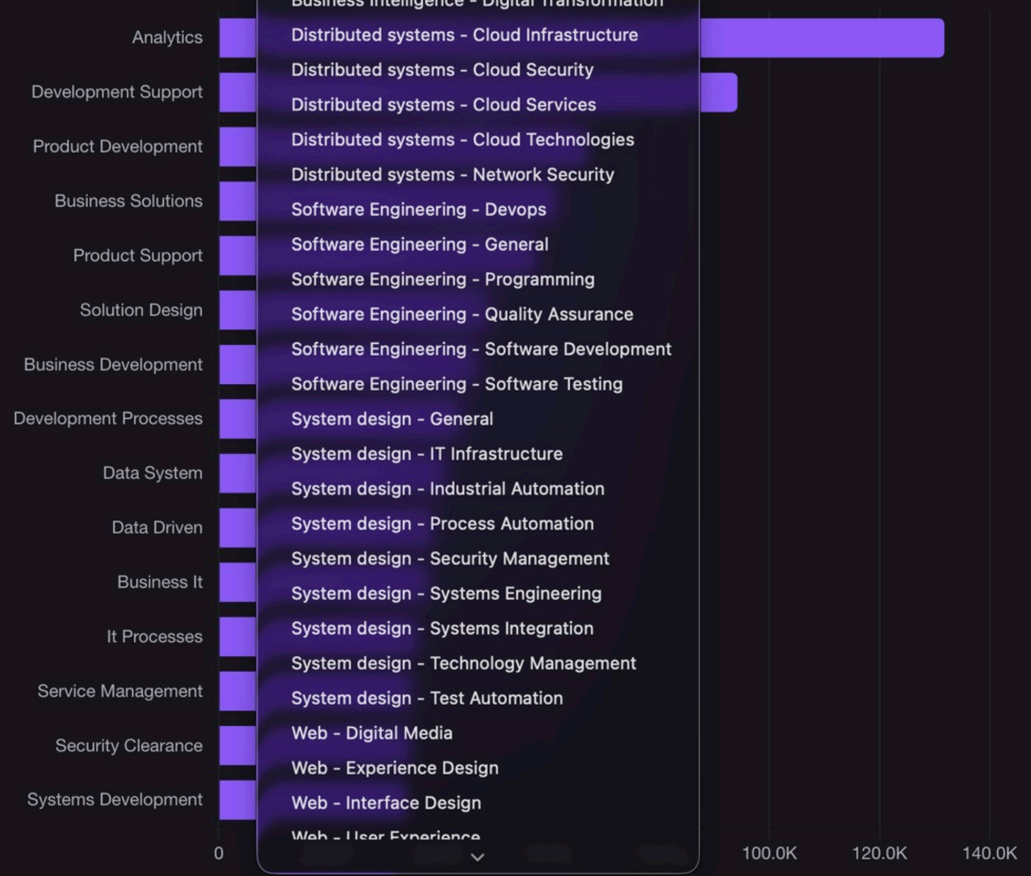
2022 2023 2024 2025 **2026** 2027 2030

387.3K
POCKET DEMAND (202

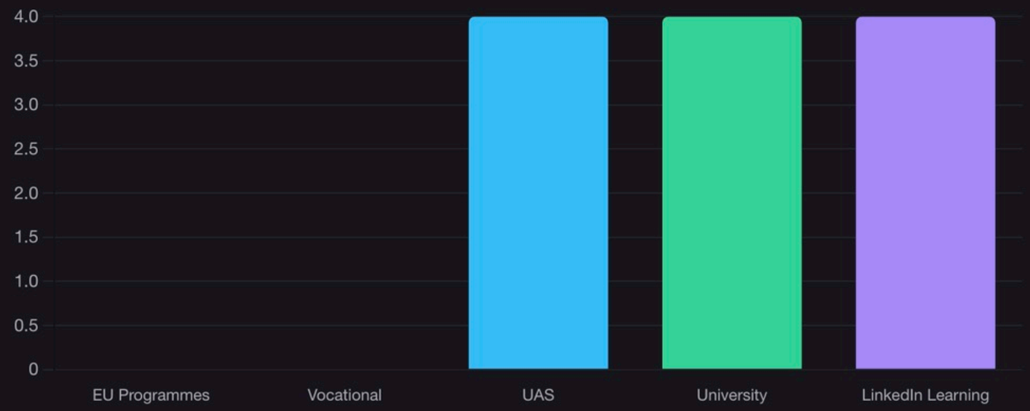
4
BEST SUPPLY INDEX (0–4)

15
SKILLS IN POCKET

Top Skills by Demand (each s



Supply Index by Channel (0–4)



Skills Explorer

Individual skills — one fixed value each

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WHAT INDIVIDUAL SKILLS MAKE UP EACH POCKET?

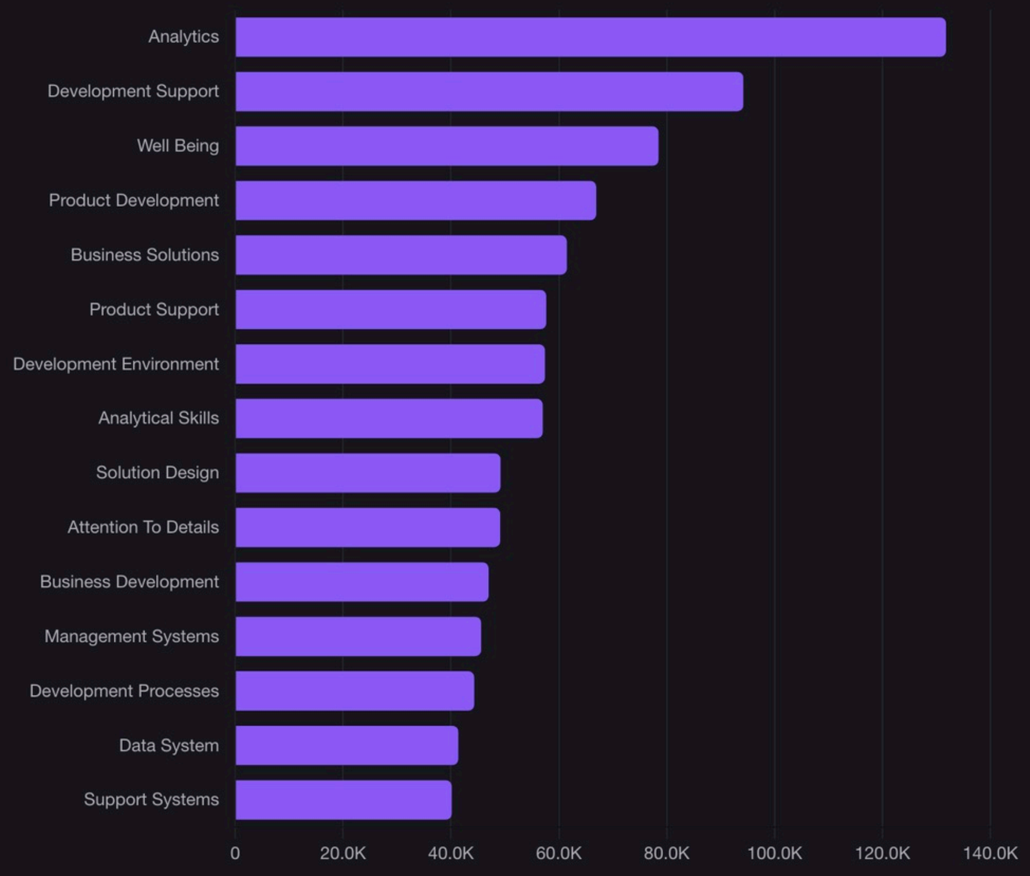
TECH AREA (REQUIRED): Artificial Intelligence

SKILL POCKET: AI & Data Science - Knowledge Management

YEAR: 2022 | 2023 | 2024 | 2025 | **2026** | 2027 | 2030

481.3K	4	15
POCKET DEMAND (2026)	BEST SUPPLY INDEX (0–4)	SKILLS IN POCKET

Top Skills by Demand (each skill = one fixed value)



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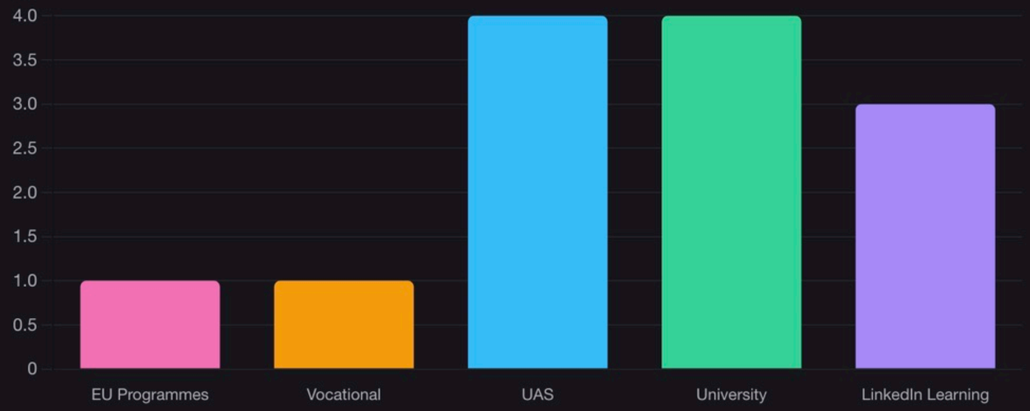

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