

Using Language Data & AI to drive transformation

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Agenda

- State of Data, LT & AI
- Building a Generative AI Framework
- Societal potential and economic impact

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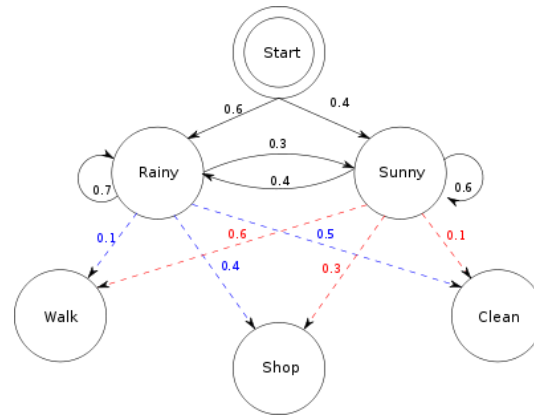
Language Technology Evolution

Did you know that natural language processing (NLP) stretch back to the 1950s?



Rule-Based Models

Introduction of Eliza in the 1960s used **pattern recognition and predefined rules**



Statistical Language Models

1970-2000s

Evolved probabilistic methods to analyse language



Deep Learning Models

1980s – Present

Focused on recognizing short-term word relationships within sequences

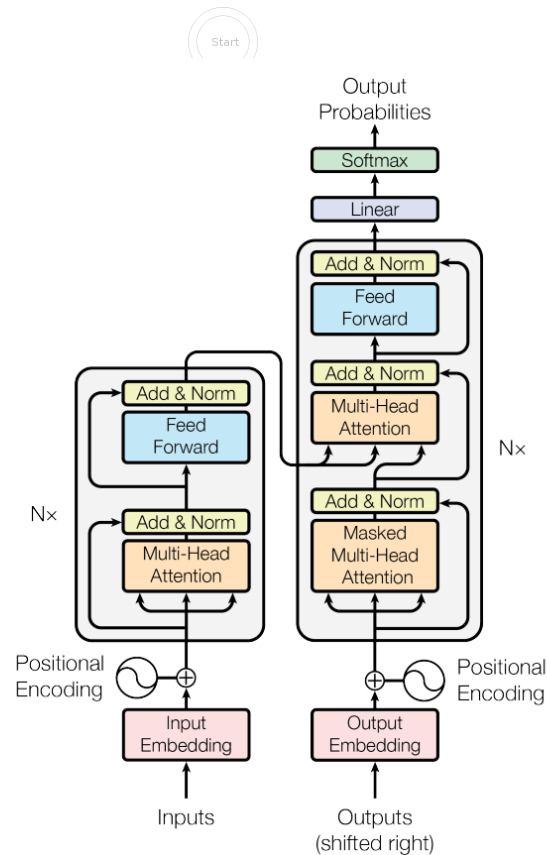
Language Technology Revolution



Rule-Based Models
1960s
used pattern recognition
and predefined rules



Deep Learning Models
1980s – Present
cused on recognizing short-
term word relationships
within sequences



Transformer Models

2017 – present

State of Data - 2025



530%
**increase of
global data
volume**
from 33
zettabytes in
2018 to 175
zettabytes



€829 billion
**value of data
economy in
the EU27**
from €301
billion (2.4%
of EU GDP) in
2018



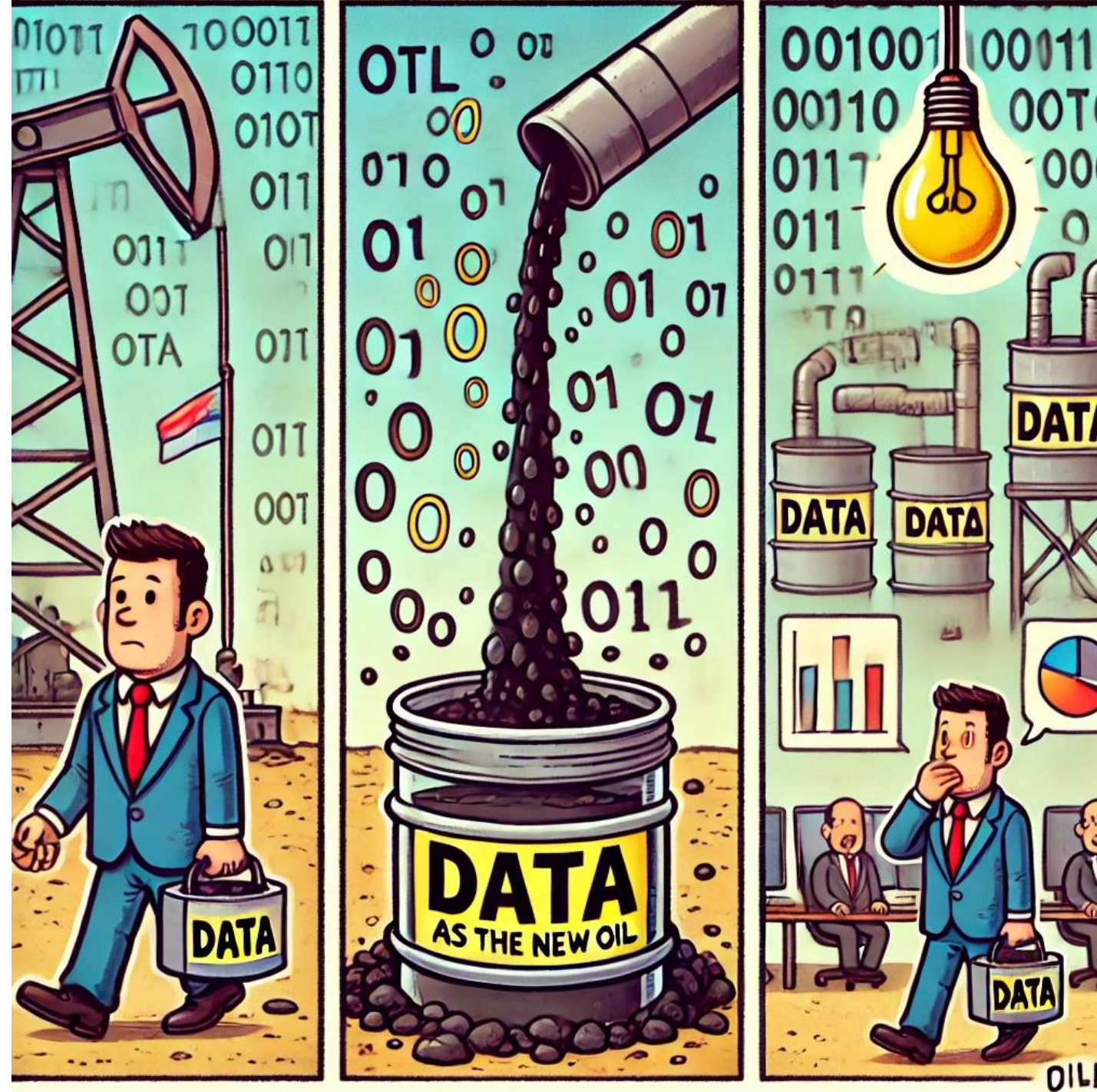
10.9 million
**data
professionals**
in the EU27
from 5.7
million in 2018



65%
**Percentage
of EU
population
with basic
digital skills**
from 57% in
2018

Data for Innovation

1. Single & holistic view
2. Simplifies decision making
3. Disrupt processes models
4. Empowers everyone





Building a Generative AI Framework

Framework Design Principals



Hybrid



Multi-cloud



Open source



Multiple models

Micro AI Agents

- Define every AI use case as a discrete microservice
- AI Agent layers to be exposed as API's
- Supports growth and innovation via AI network effects e.g. multi-AI-agent interoperability

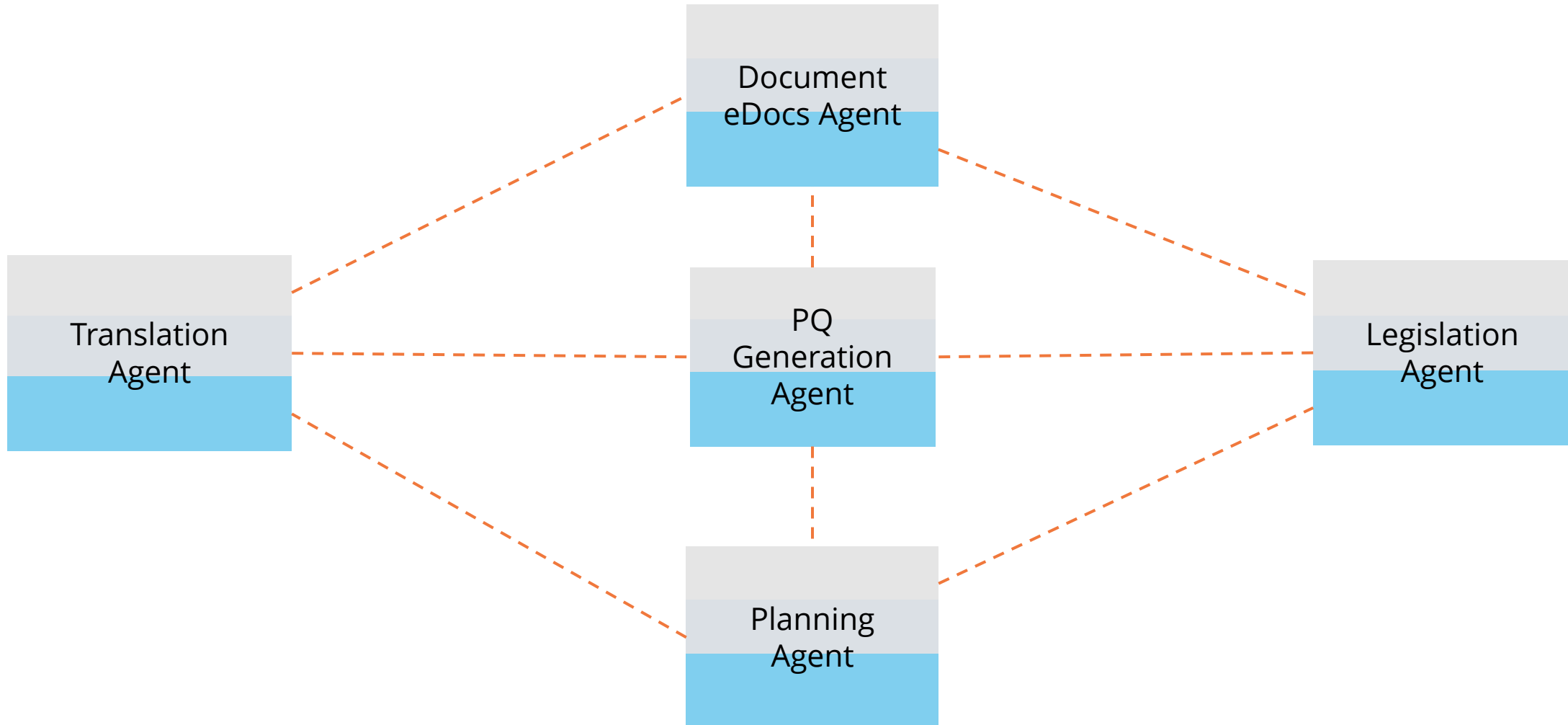
AI Agent service stack

Open API Gateway

AI Agent Application API

Data Source API

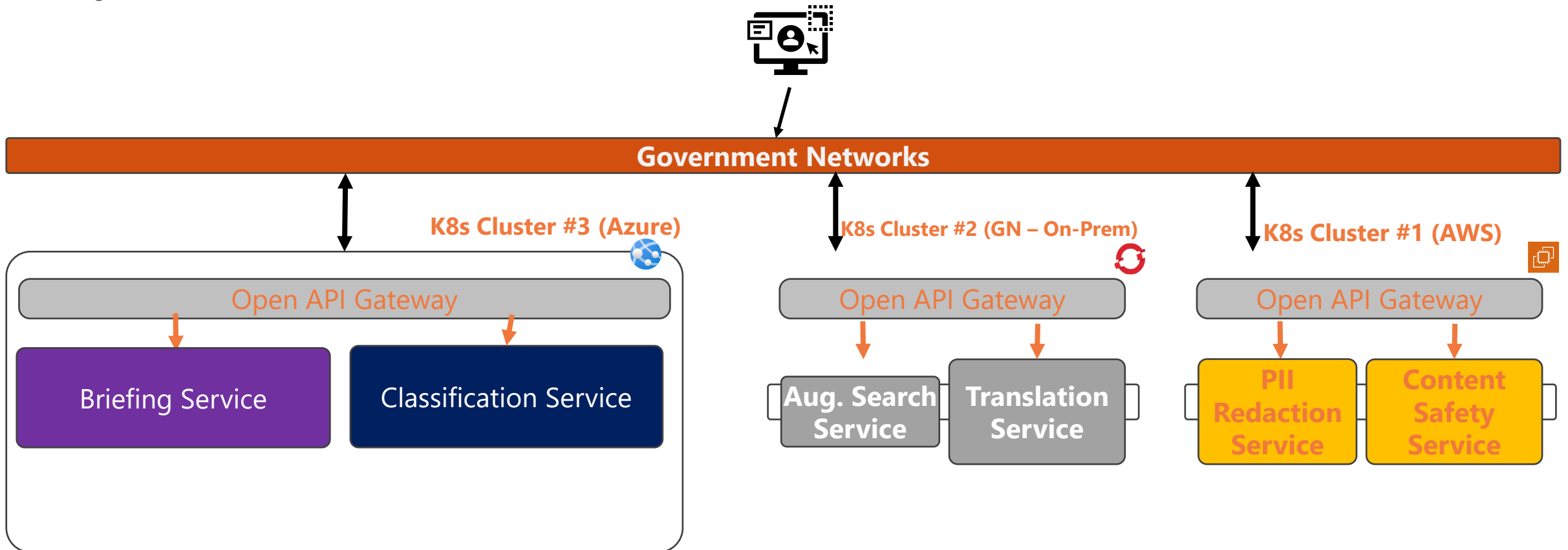
AI Network effect



AI Agent Path: Translation Service from Briefings

Showing how the micro (civil) services will be used for the eBriefings AI Assistant .

Briefing Created -> **Request** -> **Content Safety Check** -> **Store Text** -> **Translate** -> **Content Safety Check** -> **Return response**





Potential and Impact

Societal potential and economic impact

Societal potential



Economic Impact



2024 Data and AI Landscape

The infographic is organized into several main sections:

- INFRASTRUCTURE:** Includes Storage (AWS, IBM, VAST, etc.), Data Lakes (dremio, databricks, etc.), Data Warehouses (AWS, Oracle, etc.), Streaming & Memory (AWS, etc.), and Real-time Databases (CockroachDB, etc.).
- ANALYTICS:** Includes Visualization (Tableau, PowerBI, etc.), Data Science Notebooks (Jupyter, etc.), Data Science Platforms (Databricks, etc.), and Data Analyst Platforms (Mode, Alteryx, etc.).
- MACHINE LEARNING & ARTIFICIAL INTELLIGENCE:** Includes Data Science Platforms (Databricks, etc.), Enterprise ML Platforms (AWS, etc.), Data Generation & Labeling (Scale, etc.), ML Ops (Weights & Biases, etc.), AI Observability (Fiddler, etc.), AI Safety & Security (LightRise, etc.), Commercial AI Research (OpenAI, etc.), and Nonprofit AI Research (EleutherAI, etc.).
- APPLICATIONS — ENTERPRISE:** Includes Sales (Salesforce, etc.), Marketing (HubSpot, etc.), Customer Experience (Intercom, etc.), Human Capital (Workday, etc.), Automation (UiPath, etc.), and Decision (Alteryx, etc.).
- APPLICATIONS — HORIZONTAL:** Includes Code & Documentation (GitHub, etc.), Text (OpenAI, etc.), Audio & Voice (ElevenLabs, etc.), Image (OpenAI, etc.), Presentation & Content (Canva, etc.), Video Editing (Runway, etc.), Animation & 3D (Blender, etc.), and Search (Elasticsearch, etc.).
- APPLICATIONS — INDUSTRY:** Includes Finance & Insurance (Lloyds, etc.), Healthcare (Tempus, etc.), Life Sciences (Moderna, etc.), Transportation (Uber, etc.), Agriculture (John Deere, etc.), Industrial & Logistics (Siemens, etc.), and Aerospace & Defense (Boeing, etc.).
- OPEN SOURCE INFRASTRUCTURE:** Includes Data Frameworks (Spark, etc.), Formats (Parquet, etc.), Query & Data Flow (DuckDB, etc.), Data Management (Delta, etc.), Databases (PostgreSQL, etc.), OLAP (ClickHouse, etc.), Orchestration (Airflow, etc.), Infra-Structure (Kubernetes, etc.), Streaming & Memory (Kafka, etc.), Stat Tools & Languages (Jupyter, etc.), ML Ops & AI Infra (MLflow, etc.), AI Frameworks, Tools & Libraries (PyTorch, etc.), Local AI (Ollama, etc.), Search (Elasticsearch, etc.), Logging & Monitoring (Datadog, etc.), Visualization (Tableau, etc.), and Collaboration (Confluence, etc.).
- DATA SOURCES & APIs:** Includes Data Marketplaces (Bloomber, etc.), Financial & Market Data (Bloomberg, etc.), Air / Space / Sea (BlackSky, etc.), People / Entities (Zoom, etc.), Location Intelligence (Mapbox, etc.), ESG (Sustainalytics, etc.), and Sustainability (MSCI, etc.).
- DATA & AI CONSULTING:** Includes QuantumBlack, ECG, Deloitte, IBM, Cambridge, LeewayHertz, Slalom, Brooklyne Data, Ternary, Thru AI, KPMG, Lighthouse, Inet, Deeper Insights, Data Root Labs, Veda Labs, Thruve, Azoti, Addepto, Upright, Bytecode IO, Letitdata, Onca, Blue Orange, Neri, Data Capitals, Mile, Alteryx, Pymor, Pymor, Kubit, FlareFactor, Domo, CapTech, Alpoint, DMS, and NTTDTB.



Thank You

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