



INFORMATION TECHNOLOGY

2024

AI in Finance
GenAI in Action

RAYMOND JAMES

Agenda:

- Intro
- 2023 Look Back
- 2024 GenAI
 - Hype or no-hype
 - Risk and Benefit
 - Tech Focus
- 2025 and Beyond - GenAI in Action
- Q&A

“Embracing the Speed,
Striving for Accuracy”

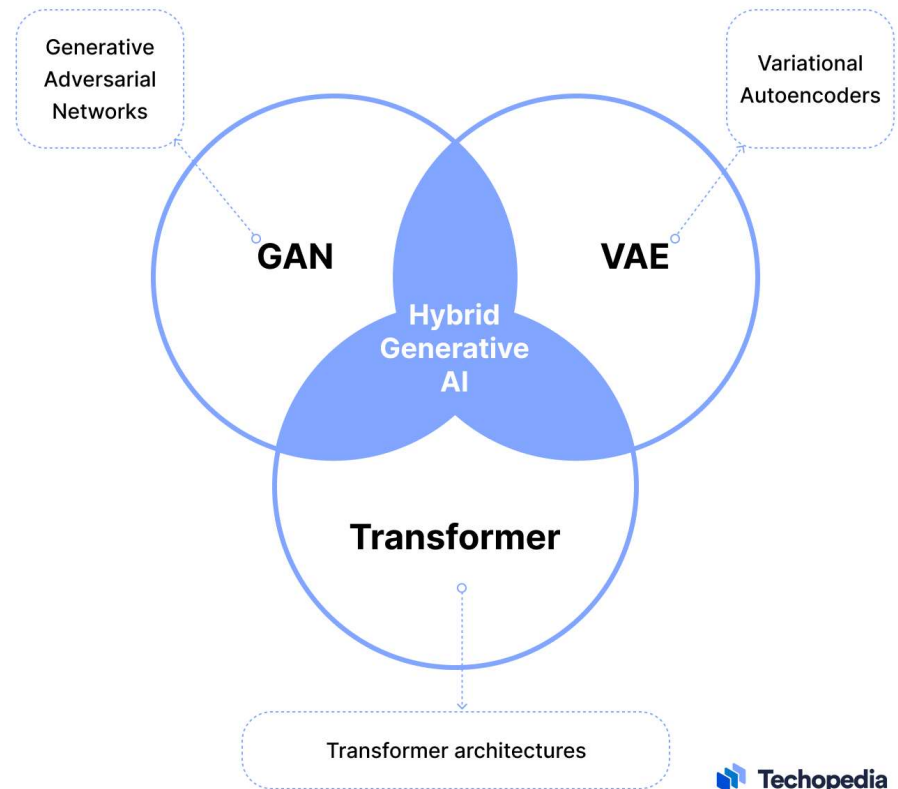
2023 Look Back

GenAI

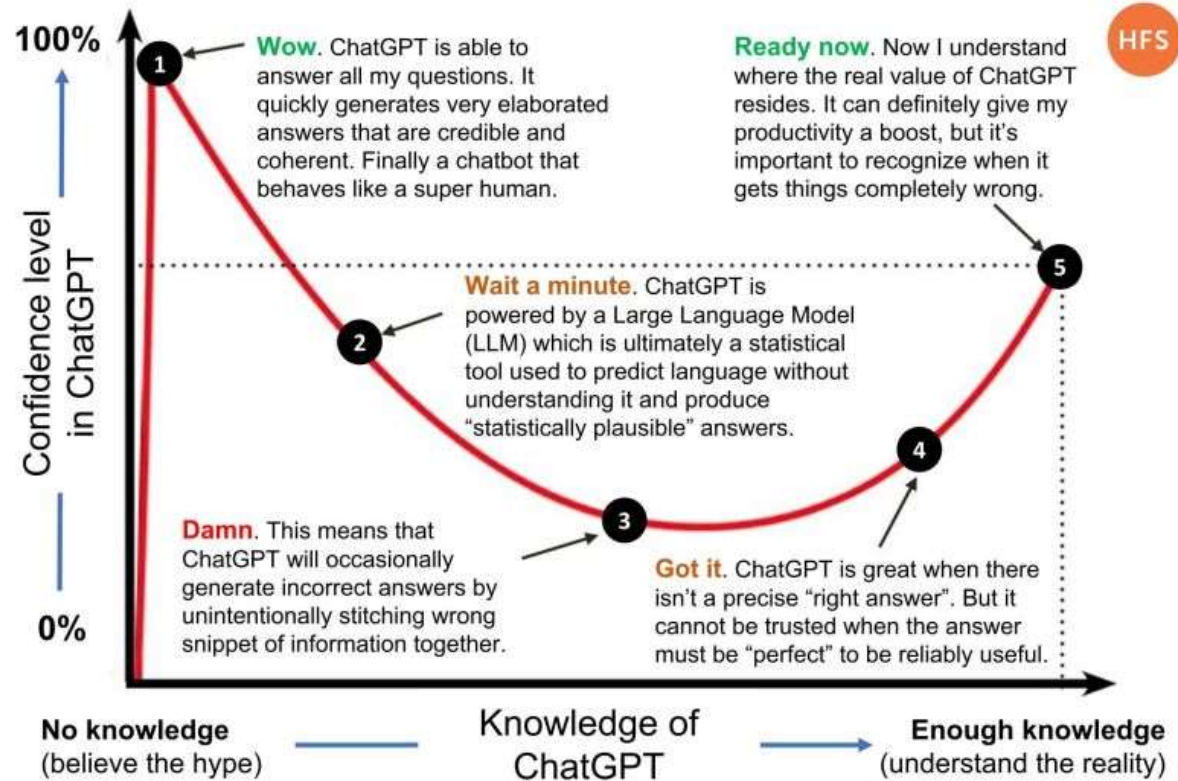
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What is Generative AI?

Generative AI, or GenAI, is a type of artificial intelligence (AI) that uses deep learning models to create new content, including **text, images, and other** contents based on the data it's trained on.



Last Year: ChatGPT through the Lens of the Dunning- Kruger Effect



2023
GenAI Capabilities

Common Content Analysis (Topic, Sentiment, Extraction)

- Emails, News, Chats, Documents, Social media

Text / Code Generation

- Email draft generation
- Draft SQL code generation
- Synthetic data in Text for model training, system testing, sensitive data masking

Text Summarization

- Summarize meeting notes, email, social media messages, market news & research documents, SEC publications...etc.

Anomaly Detection

- Fraud/No Fraud, AML, Sanctions

Recommendation System

- Understand user review and comment

Voice Understanding

- Meeting note summary

HOW TO ADAPT TO GENERATIVE AI

Think Big, Start Small, Act Quick, Learn Fast

- Change our way to think
- Recall Disruptive Technologies
 - e-Commerce, Mobile, Big Data, Cloud, Platform Business, etc.
- Suggested Executive Actions
 - Think AI Revolution
 - Democratizing AI
 - Data-driven AI
- Make it safe and scalable
 - Reinforcement learning
 - Human-In-The-Loop (HITL)
 - Steerability
 - Bias & Fairness
 - Explainability & Transparency

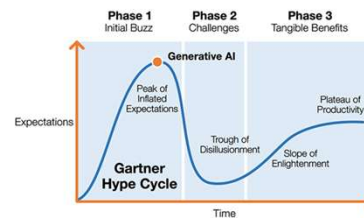


2024

GenAI

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Hype or No-Hype



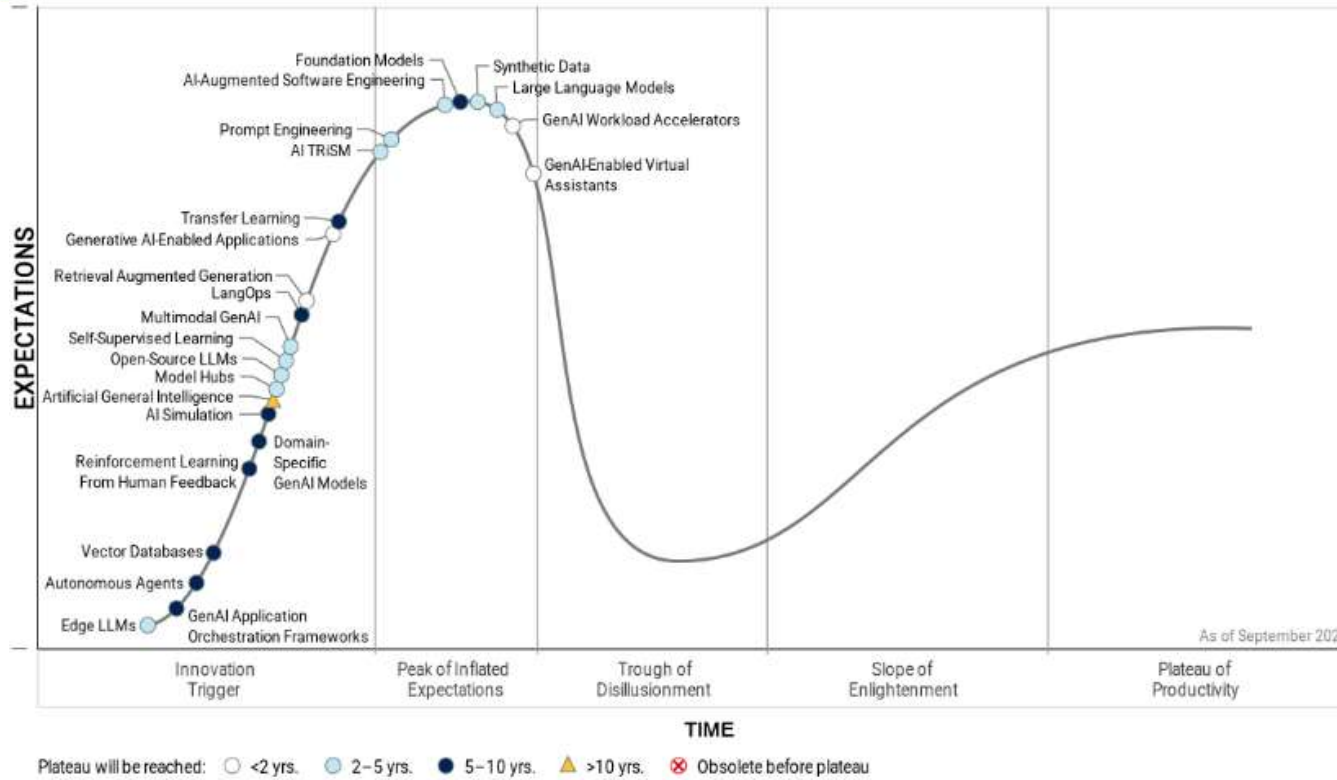
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- Jamie Dimon says AI is not just hype — **‘This is real’**
 - "be used in almost every job"
 - "because it can do things the human mind simply cannot do."
 - "You've gotta get it, **make it part of the management conversation.**"
- "To realize this potential, businesses need to focus on **identifying and scaling use cases** that are **aligned** with their **business goals** and **have a clear path to value creation.**" - Aible.com
- "The generative AI payoff may only come when companies **do deeper organizational surgery** on their business" - McKinsey 2024



IMAGE SOURCE: GETTY IMAGES.

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Hype
or
No-Hype?

Gartner

2024 Key Trends in Analytics and Artificial Intelligence

GenAI Implementations Will Evolve Rapidly From Pilots to Holistic Solutions

- Initiate a pilot to validate concepts and technology
- Define a modular architecture approach as part of the technology roadmap
- Upskill AI teams to synthesize existing AI with new GenAI tools and technology



AI and Analytics Maturity Will Require a Focus on Scale and Industrialization

- Define a federated analytics architecture to analyze distributed data
- Automate and orchestrate data and ML pipelines for scale
- Implement holistic metrics, model and feature management systems to ensure reliability, reproducibility and reusability

Trust/Transparency Requirements Will Drive Data Literacy and Responsible AI Practices

- Implement a data literacy program to increase analytics proficiency
- Leverage AI fairness toolkits and explainable AI frameworks for compliance and interpretability
- Embed data privacy and model security practices as part of wider D&A governance

Gartner 10.2023

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Speed



Accuracy



Risk and Benefit



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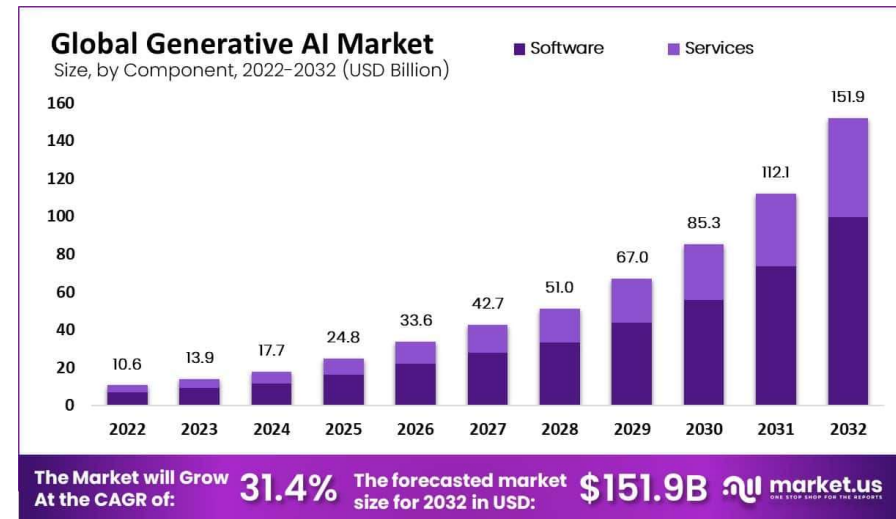
Salesforce's research found that **82%** of business leaders said GenAI will **lower overall business costs**, and **80%** indicated it will **increase revenue**.

McKinsey estimates that GenAI could **add \$2.6 to \$4.4 trillion** annually to the global economy.

Gartner predicts that generative AI (GenAI) **software spending** will increase from 8% in 2023 to 35% by 2027, at a CAGR of 19.1% over the next six years.

According to **Statista**, the **generative AI market** is expected to grow from \$45 billion at the end of 2023 to **nearly double** that **by 2030**, with an annual growth of nearly \$20 billion until the end of the decade.

Bloomberg Intelligence predicts the market will grow from \$40 billion in 2022 to **\$1.3 trillion by 2032**, with a compound annual growth rate (CAGR) of 42% over the next 10 years.

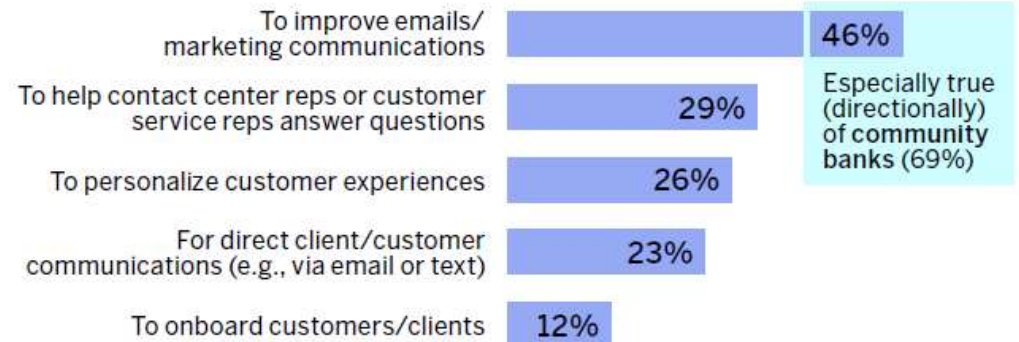


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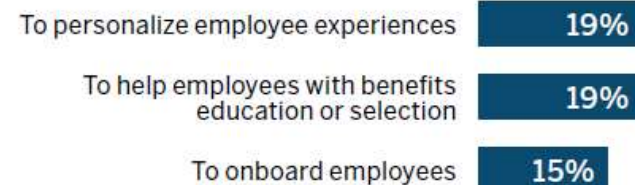
General Business Use



Client/Customer-related Use



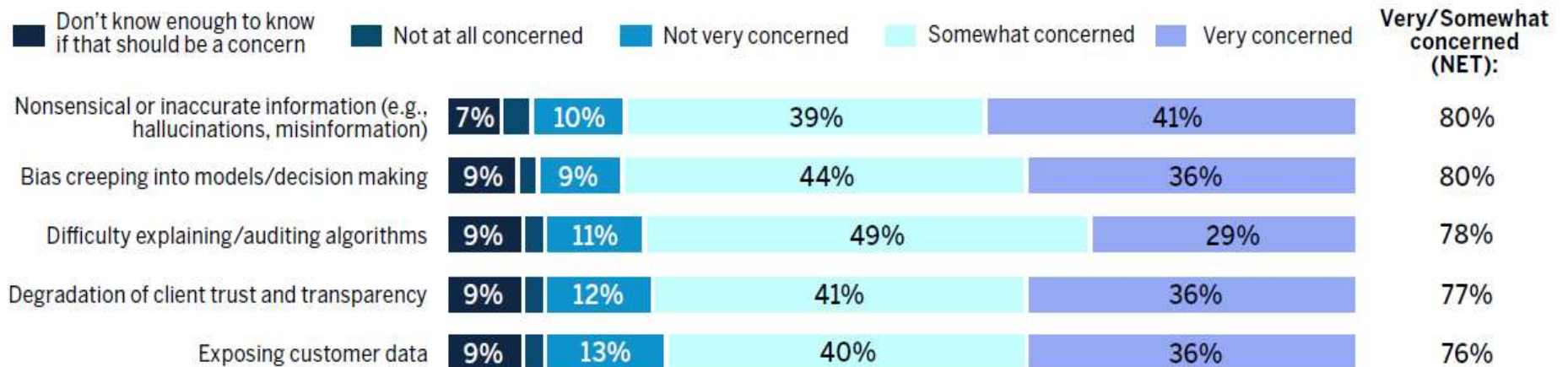
Employee-related Use



Source: Arizent. 2024 Unleashing the Power of AI
Base: Total respondents n=127; Community bank respondents (less than \$10B in assets) n=16

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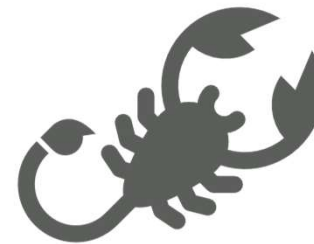
Banks have real and widespread concerns about business risks posed by generative AI



Arizent, 2024 Unleashing the Power of AI
American Banker, March 2024

New threats:

- Deep fake to a new level – Inappropriate content generation
- First Generation of AI worm – Morris II (3/2/2024)
 - steals confidential data as it spreads
- OpenAI jail break

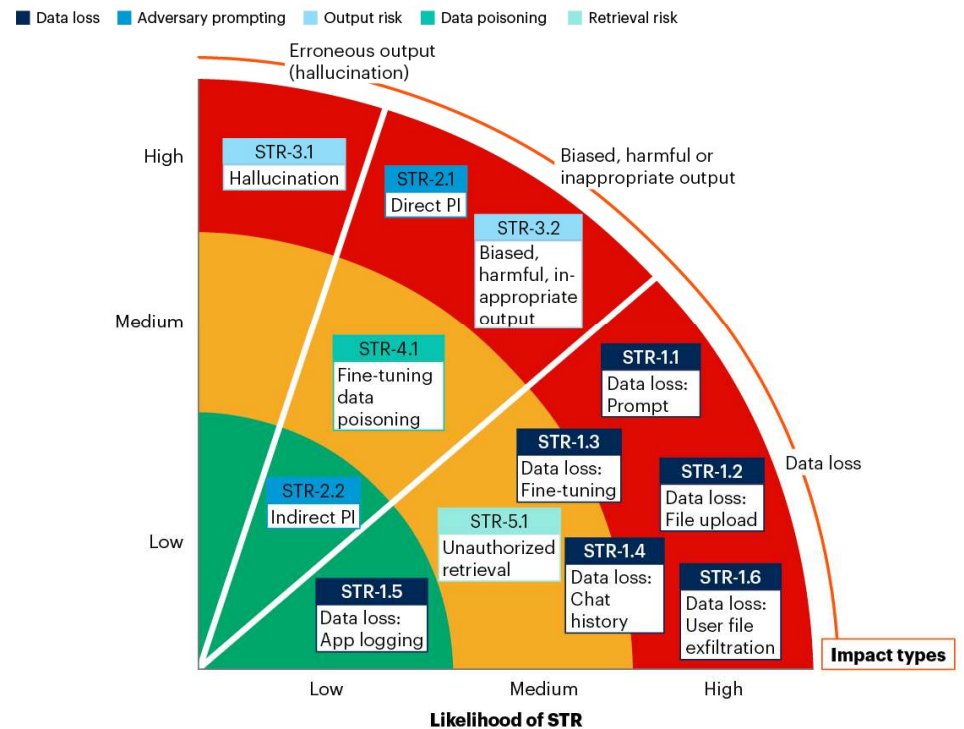


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Implement AI Risk Management and Governance Framework

- NIST's RMF
- OECD AI Principles
- Open Worldwide Application Security Project (OWASP) AI Security and Privacy Guide

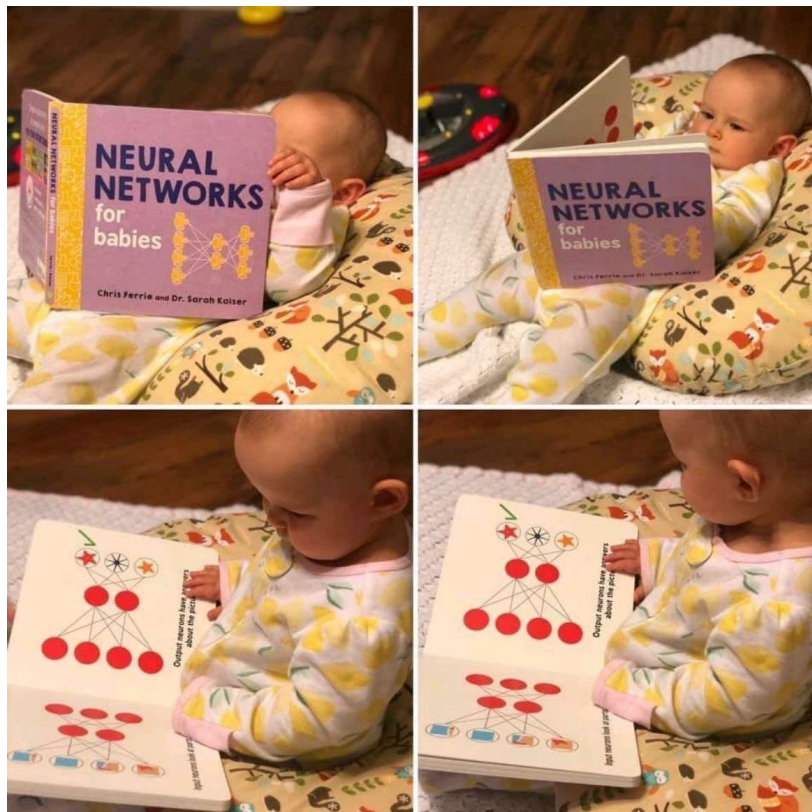
Top Generative AI Adoption Security Threats and Risks (STR) and Impact Types



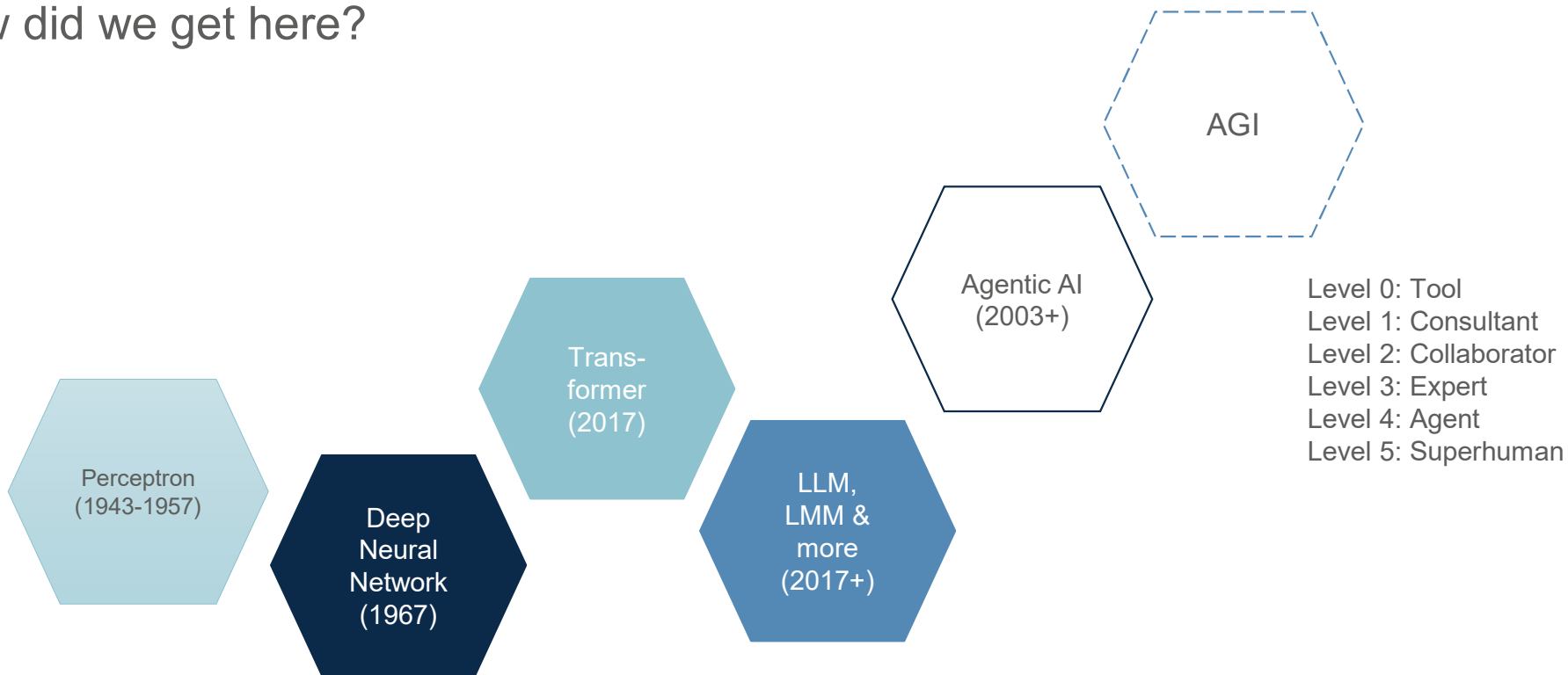
Tech Focus

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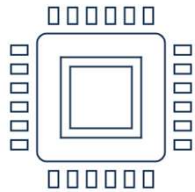
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How did we get here?



Technology Landscape



- **LLMs – Closed-source vs. Open-Weight**
 - LLMs – Is bigger the better?
- **Applied LLM**
 - Prompt -> Few-shot -> Grounding -> Fine-Tuning
- **Beyond Language - from LLM to LMM**
 - Text-to-Image
 - Text-to-Music
 - Text-to-Anything
- **RAG = fast ROI**
- **Hardware and Software Optimization**
 - EdgeAI
- **LLM-based Agents – smart sequences of actions**
 - on AutoGPT, GPTresearcher, or STORM
 - From gather and synthesize information to deeper research
 - Single agent to multi-agent

Technology Evolution

- Quantum Computing can accelerate our AI work
- Diffusion Model – partner with Transformer Model
- Text + Vision – the most prominent sensory to brain
- Neuralink patient **playing Mario Kart with his mind**



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Vendors on Steroid

Text-to-Anything:

- OpenAI Sora
- Adobe Firefly
- Udio

More OpenAI/ChatGPT alternatives:

- Google Gemini
- Mistral / Mixtral 8x7B
- xAI Grok-1.5V
- Anthropic Claude 3
- Perplexity.ai
- Stable Diffusion – Stability.ai
- Midjourney 5.2

...

The collage features several key elements:

- Top Left:** A woman in a black coat and red dress walking on a wet city street at night.
- Top Right:** A grid of logos for various AI companies, including LUMA AI, inworld, Materials, DPTechnology, Manufacturing, CSM, Rosebud AI, Cradle, Atomic Industries, and others.
- Middle Right:** A vibrant image of a colorful parrot, the Adobe Firefly logo.
- Bottom Left:** A person's head with a glowing, multi-colored brain, the xAI logo, and the text "INTRODUCING GROK 1.5".
- Bottom Center/Right:** A grid of logos for various AI infrastructure and models, including Elicit, Twelve Labs, Objective, Perplexity, Groundlight, Coding, Productivity & knowledge management, Warehouse management, Magic, Humanoids, FIGURE, DevOps, Flip AI, Mechanical Orchard, Cybersecu, BINARY, AI infrastruc, Models, Open foundation, MISTRAL AI, 01.AI, Fine-tuned & local, Data prepara, Chips, groq, EXTROPIC, LIGHTMATTER, tenstorrent, rebellions, XANADU, Accelerated computing, VOLTRON DATA, and CBINSIGHTS.

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Interleaved Image-text Pairs

Prompt:

How much did I pay for tax?
Where is the information?



GPT-4V:

In the first receipt, you paid \$3.72 for tax. The information is located at the bottom of the receipt. In the second receipt, you paid \$42.23 for tax. The information is located near the bottom of the receipt, under the "Sales Tax" line. In the third receipt, you paid \$4.58 for tax. The information is located at the bottom of the receipt, under the "TAX" line. In total, you paid \$50.53 in tax across all three receipts.

Prompt:

Please read the text in this image and return the information in the following JSON format (note xxx is placeholder, if the information is not available in the image, put "N/A" instead).
{ "Surname": xxx, "Given Name": xxx, "USCIS #": xxx, "Category": xxx, "Country of Birth": xxx, "Date of Birth": xxx, "SEX": xxx, "Card Expires": xxx, "Resident Since": xxx }

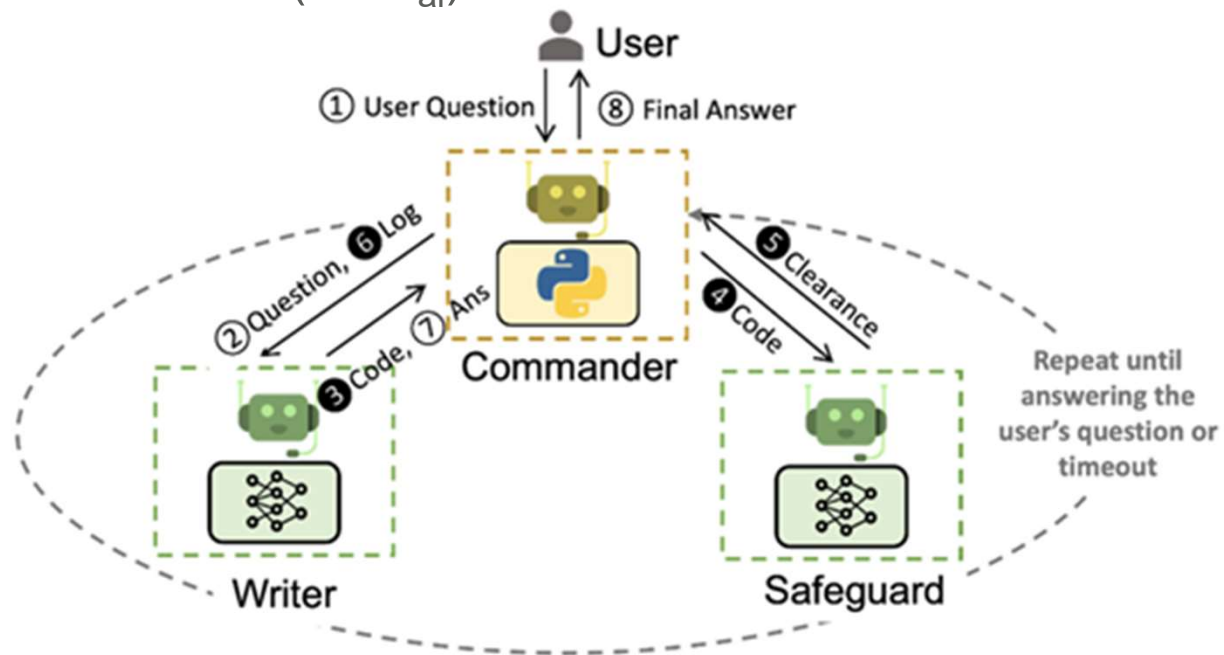


GPT-4V:

{ "Surname": "STEVENS", "Given Name": "ICHIKA", "USCIS #": "000-000-000", "Category": "IR1", "Country of Birth": "Japan", "Date of Birth": "18 AUG 1988", "SEX": "F", "Card Expires": "07/04/2027", "Resident Since": "07/05/2017" }

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Collaborative Agent Network (CAN_{ai})



Multi-agent system for code-based question answering. Commander receives questions and coordinates with Writer and Safeguard. Writer crafts code and interpretation. Safeguard ensures safety. Commander executes code. Image courtesy of Microsoft AutGen.

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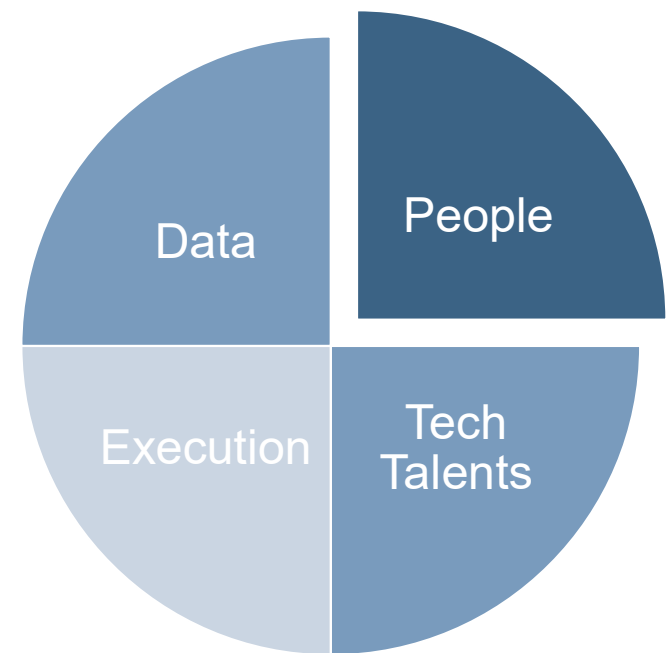


2025 and Beyond

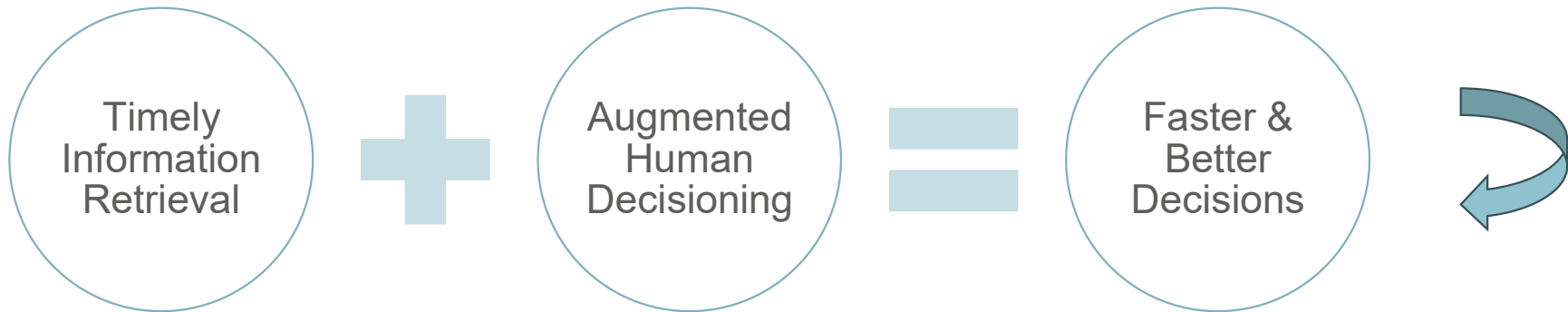
GenAI in Action

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Identify Friction, Think Better Execution




The AI-Assisted Automation Formula:



Key applications of GenAI in Banking Sector:

1. Chatbots and virtual assistants
2. Fraud detection and prevention
3. Credit risk assessment
4. Personalized marketing
5. Investment management
6. Document analysis and processing
7. Regulatory compliance



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Concerns:

What if I missed the boat?

Potential business risks:

- Inaccurate information
- Bias decision
- Loss of personal touch with customers

AI adoption will ultimately impact the nature of jobs in the industry

ROI, KPI and metrics

Finding the right tech talents

Solution:

Never too late. Get C-Suite buy-in. Get ready for tech disruptions. Act fast, break things in Sandbox.

Keep Human in the loop.
Custom metrics and test framework.
Establish digital trust.

Cross-train and re-train your workforce now.

Pick the right tool for the right job. Grab low hanging fruits. Leverage tech vendors. Start small, think big.

Create a true collaborative and learning culture.
Get qualified staff from internal and external.
Conduct effective and specific training programs.

Speed



“Embracing the Speed,
Striving for Accuracy”

Accuracy



Q&A



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