Enhancing Acquisition Outcomes through Leveraging of Artificial Intelligence

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Overview for Today

1. What is AI in Acquisition?

2. Our Team and Why it Matters …

3. The Paper … Leveraging AI for Acquisition

4. The Big "Takeaway"

5. AI in Acquisition 2024: Where are we now?

6. AI in Acquisition 2035: Imagine if …

7. Recommendations

8. Hypothesis, Algorithm, Recipe, & Onward!

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What is AI in Acquisition?

Our Cross-Enterprise Team

Accomplishing this business transformation cannot happen in a singular bubble. Acquisition professionals must work alongside our technologists to ensure tools effectively improve the workflow.

Steve Roe   Erin Schultz   Bob Cherinka   Rachel Hughes

LLM4ACQ Leads

Ryan Novak   Kevin Forbes

Acquisition Team

Justin Raines   Rachel Giachinta   Christopher Barlow   Zachary Levenson

Development Team

Mike Silvasy   Patrick O'Leary

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NPS Symposium Paper
Enhancing Acquisition Outcomes Through Leveraging AI

➢ Current State and Future State of AI in Federal Acquisition

➢ AI Threat Landscape and Mitigating Threats, Risks, and Biases

➢ Sponsor-Focused AI Implementation Recommendations

Enduring sentiments	Areas to dig deeper
Cultural embracement of AI – intellectual curiosity, formal education/training, with a realistic account of risk	AI Maturity Model; Assurance Framework
Interdisciplinary teams at the tip of the spear of enterprise transformation	What's available today (USG-industry); need greater transparency on successes / lean into thought leadership on both sides
Criticality of AI actionable/involved governance structures	Continuous evaluation and assessment – how to get acquisition professionals thinking within this frame without introducing cognitive overload
Double tap on data hygiene prerequisite	Near term road-mapping – moving beyond the hype, into transition

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Artificial Intelligence

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The MITRE Corporation

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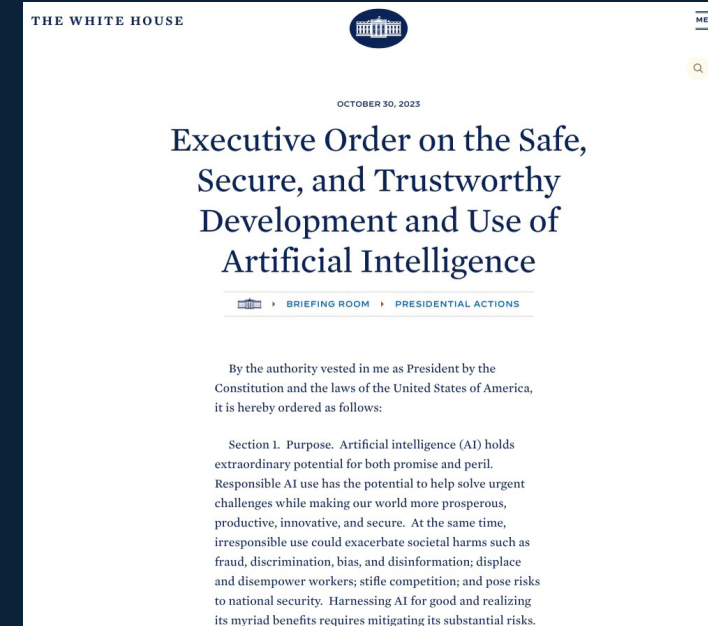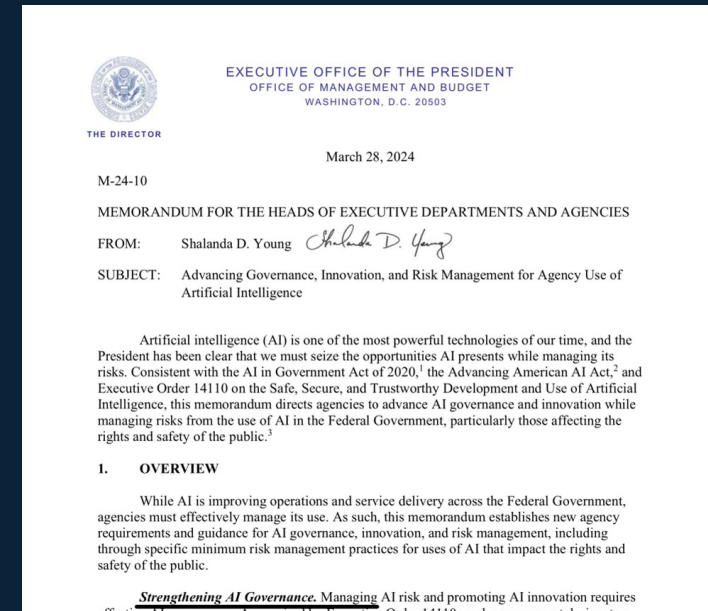
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AI in Government *Today*

Institutional Bodies
- GSA's AI Center of Excellence
- DoD's Chief Digital and AI Office

Acquisition Facilitation Mechanisms
- Tradewinds
- MITRE AI Assurance & Discovery Lab

Guiding Frameworks
- AI Blueprint: 12 Considerations when Developing an AI Roadmap
- DHS's AI/ML Strategic Plan
- GSA's AI Guide for Government

EXECUTIVE OFFICE OF THE PRESIDENT
OFFICE OF MANAGEMENT AND BUDGET
WASHINGTON, D.C. 20503

THE DIRECTOR

March 28, 2024

M-24-10

MEMORANDUM FOR THE HEADS OF EXECUTIVE DEPARTMENTS AND AGENCIES

FROM: Shalanda D. Young

SUBJECT: Advancing Governance, Innovation, and Risk Management for Agency Use of Artificial Intelligence

THE WHITE HOUSE

OCTOBER 30, 2023

Executive Order on the Safe, Secure, and Trustworthy Development and Use of Artificial Intelligence

BRIEFING ROOM › PRESIDENTIAL ACTIONS

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Future State of AI: Acquisition Use Cases for 2035

While the Future of AI in Acquisition in nearly limitless, MITRE identified 20 likely use cases of where AI will be regularly used in the acquisition process. These are key focal points for AI thought leadership and development

1	**Building and "Assessing" a Request for Information (RFI) & Responses**
2	Industry Constructing Responses to Government
3	Building Market Research Assessments
4	Performing Open-Source Market Intelligence
5	Assessing Risk of Existing Efforts
6	Identifying Similar Programs
7	Developing Analyses of Alternatives
8	Building Management Plans
9	Creating Work Statements and CDRLs
10	Estimating Cost
11	Building Contract Considerations and Recommendations
12	Tailoring Training for New Team Members
13	Compiling a Comprehensive Bidders Library
14	Checking Proposals for Compliance
15	Industry Generating Proposal Content
16	Conducting Initial Proposal Scoring
17	Building Source Selection Technical Reports
18	Compiling Past Performance Data
19	Accelerating Transition-In
20	Detecting Performance Assessment Hot-Spots

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"Replacing anywhere you can, anything repetitive, and you step in as the critical thinker jockey."

Erin Schultz, MITRE, CAMS Acquisition Innovation Center Director, on leveraging AI in Federal Acquisition

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Large Language Models (LLMs) for "Everyday" Tasks

- **Brainstorming and Idea Generation**

- **Summarization and Information Extraction**

- **Document Creation**
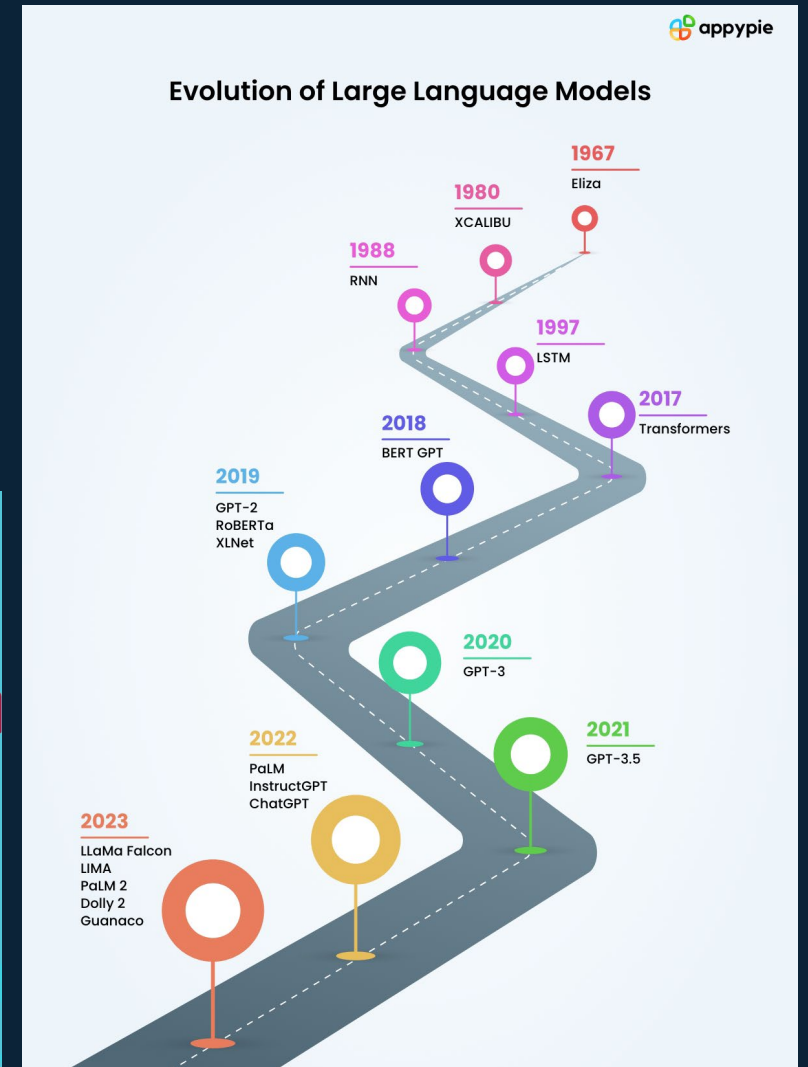
- **Refining Communication**
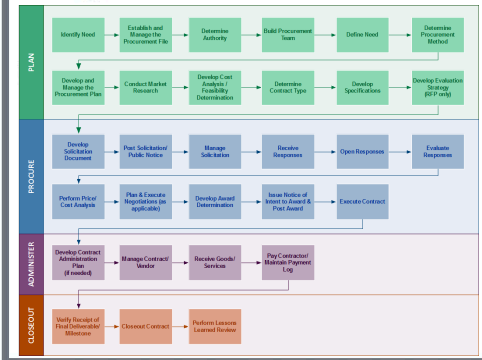
- **Software Coding**

- **Image Creation**

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Large Language Models (LLMs) are attracting particular attention for integration in workflow processes
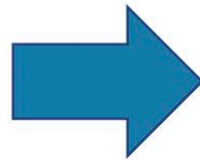
Inputs

SOWs
Notes
RFIs
Vendor Responses
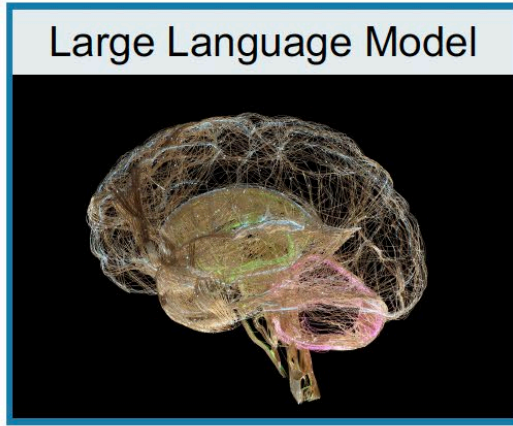**Templates**
Reports
Documentation
Exemplars

A **language model** is a probabilistic model of natural language that generates likelihoods of a sequence of words, based on the text corpora used for its training.[1]
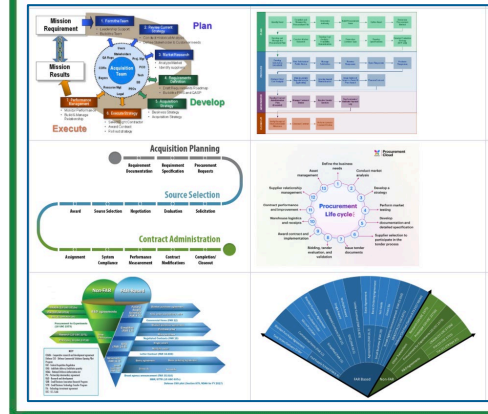
Training →

Large Language Model

→ Adaptation

Words can be mathematically represented (<vector>) and mathematically manipulated.
<Berlin> - <Germany> + <France> = <Paris>

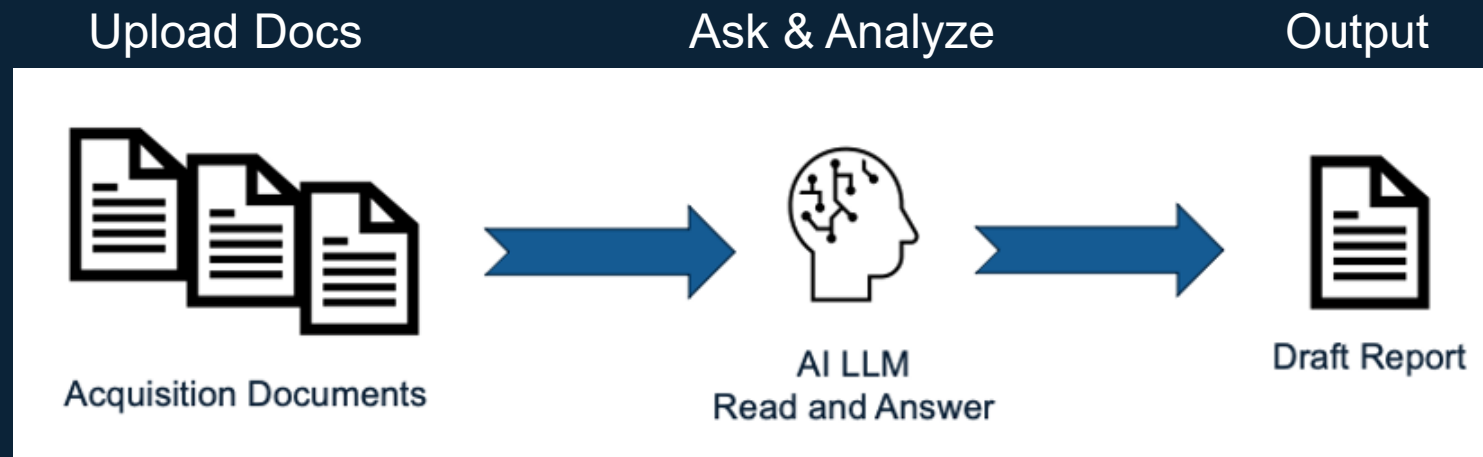Outputs of LLMs are based on word probabilities from the data used to train the model.

Outputs

Documentation
Assessments
Recommendations
Summaries
Compliance Check
Minutes vs Days
Learning

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5

[1] Jurafsky, et al. (2021). "N-gram Language Models". *Speech and Language Processing.*

Applying AI for Acquisition Today

- The Problem: The Government Acquisition Process is lengthy, expensive, complex and manual.

- Our Hypothesis: We believe there is a basic activity pattern applied to some acquisition processes suited for **AI / LLMs to assist and empower humans**, not replace them.

Upload Docs   Ask & Analyze   Output

Acquisition Documents → AI LLM Read and Answer → Draft Report

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Starting your AI Journey?:
9 Recommendations for Success…

1. "Lean into" the use of AI in Acquisition

2. Establish a Cross-Functional Team of Experts

3. Establish a holistic AI acquisition framework

4. Promote transparency/accountability

5. Foster collaboration and information sharing

6. Advocate policy and regulatory updates

7. Understand the drivers of AI success

8. Develop training and education programs for an "AI Ready Workforce"

9. Adopt a security-forward mindset

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Questions

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