Trustworthy Digital Society Hub

UNSW

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**Agentic Artificial Intelligence & Trust Technology**

# **Introduction**

In 2022 Chatgpt.com was launched by OpenAI, making the GPT3.5 Large Language Model freely available to the public. Text-based chatbots had existed for many years, but the language skills of ChatGPT had crossed a threshold o

# **Large Language Models**

Large Language Models (LLMs) are based on Generative Pretrained Transformers (GPTs), which are a type of Artificial Neural Network (ANN). ANNs were conceptualised in the 1950s but could not be implemented as machine learning models until sufficient computational power became available in the 2000s. A basic ANN consists of one or more input nodes connected to one or more output nodes via connections with one or more layers of intermediate nodes. ANNs

Generative Pretrained Transformers

Model Benchmarking

Multimodal Models

Reasoning Models

# **Agentic Systems & Frameworks**

An agentic system … what is a RAG …

# **Agentic Platforms & Services**

Frameworks allow you to create agents but how to run them

# **Model Context Protocol (MCP)**

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# **Agent to Agent Protocol (A2A)**

Google's Agent2Agent (A2A) protocol is designed to establish a standardized method for AI agents to communicate, irrespective of their origin, framework, or location. This initiative seeks to foster seamless collaboration and collective intelligence among AI agents, thereby enhancing the effectiveness of agentic solutions. A2A operates as a networking layer that complements other protocols such as Anthropic's Model Context Protocol (MCP), contributing to a more unified AI agent ecosystem.

A2A addresses the challenge of integrating disparate AI systems by providing a common language for AI agents. It enables these agents to share context, replies, artifacts, and user instructions, facilitating collaborative problem-solving. The design of A2A supports flexible user experiences by allowing agents to negotiate content formats like iframes, videos, and web forms.

The protocol utilizes "parts" within messages, which are fully formed pieces of content with specified content types, enabling negotiation of the correct format needed between agents. A2A builds upon existing standards including HTTP, SSE, and JSON-RPC.

Google's vision for A2A is to create an open, community-driven project that encourages contributions and updates from the open-source community. Industry experts from companies like Deloitte, Accenture, EPAM, and New Relic believe A2A will accelerate AI adoption by simplifying integrations, facilitating data exchange, and fostering a more unified AI agent ecosystem. LangChain has also expressed interest in collaborating with Google Cloud on this shared protocol.

A2A complements Anthropic's Model Context Protocol (MCP). While A2A provides a networking layer for agents to communicate, MCP functions as a plugin system, granting agents access to tools, context, and data.

* [Announcing the Agent2Agent Protocol (A2A)](https://developers.googleblog.com/en/a2a-a-new-era-of-agent-interoperability/)
* [Build and manage multi-system agents with Vertex AI - Google Cloud](https://cloud.google.com/blog/products/ai-machine-learning/build-and-manage-multi-system-agents-with-vertex-ai)
* [Google just Launched Agent2Agent, an Open Protocol for AI agents ...](https://www.maginative.com/article/google-just-launched-agent2agent-an-open-protocol-for-ai-agents-to-work-directly-with-each-other/)
* [Protocols for Agentic AI: Google's New A2A Joins Viral MCP](https://virtualizationreview.com/articles/2025/04/09/protocols-for-agentic-ai-googles-new-a2a-joins-viral-mcp.aspx)
* [Google's Agent2Agent interoperability protocol aims to standardize ...](https://venturebeat.com/ai/googles-agent2agent-interoperability-protocol-aims-to-standardize-agentic-communication/)
* [Meet Google A2A: The Protocol That will Revolutionize Multi-Agent ...](https://medium.com/@the_manoj_desai/meet-google-a2a-the-protocol-that-will-revolutionize-multi-agent-ai-systems-80d55a4583ed)
  + [Python A2A GitHub Repository](https://github.com/themanojdesai/python-a2a)
  + [Python A2A on PyPI](https://pypi.org/project/python-a2a/)
  + [Python A2A Documentation](https://python-a2a.readthedocs.io/en/latest/)
  + [Google’s A2A Protocol Specification](https://google.github.io/A2A/)
* [Google's Agent2Agent Protocol Helps AI Agents Talk to Each Other](https://thenewstack.io/googles-agent2agent-protocol-helps-ai-agents-talk-to-each-other/)

# **Agentic Authentication & Digital Identity**

# **Agentic Payments & Web3**

# **Cloud Compute Economics**

# **Trust Technology & Digital Sovereignty**

# **Conclusion**

# **References**