

# All Readings: Introduction to Large Language Models (G-LLM-I)

Here are the assembled readings on large language models:

- Introduction to Large Language Models  
<https://developers.google.com/machine-learning/resources/intro-llms>
- Language Models are Few-Shot Learners:  
<https://proceedings.neurips.cc/paper/2020/file/1457c0d6bfc4967418bfb8ac142f64a-Paper.pdf>
- Getting Started with LangChain + Vertex AI PaLM API  
[https://github.com/GoogleCloudPlatform/generative-ai/blob/main/language/orchestration/langchain/intro\\_langchain\\_palm\\_api.ipynb](https://github.com/GoogleCloudPlatform/generative-ai/blob/main/language/orchestration/langchain/intro_langchain_palm_api.ipynb)
- Learn about LLMs, PaLM models, and Vertex AI  
<https://cloud.google.com/vertex-ai/docs/generative-ai/learn-resources>
- Building AI-powered apps on Google Cloud databases using pgvector, LLMs and LangChain  
<https://cloud.google.com/blog/products/databases/using-pgvector-llms-and-langchain-with-google-cloud-databases>
- Training Large Language Models on Google Cloud  
<https://github.com/GoogleCloudPlatform/llm-pipeline-examples>
- Prompt Engineering for Generative AI  
<https://developers.google.com/machine-learning/resources/prompt-eng>
- PaLM-E: An embodied multimodal language model:  
<https://ai.googleblog.com/2023/03/palm-e-embodied-multimodal-language.html>
- Parameter-efficient fine-tuning of large-scale pre-trained language models  
<https://www.nature.com/articles/s42256-023-00626-4>
- Understanding Parameter-Efficient LLM Finetuning: Prompt Tuning And Prefix Tuning
- Parameter-Efficient Fine-Tuning of Large Language Models with LoRA and QLoRA  
<https://www.analyticsvidhya.com/blog/2023/08/lora-and-qlora/>
- Solving a machine-learning mystery:  
<https://news.mit.edu/2023/large-language-models-in-context-learning-0207>

Here are the assembled readings on generative AI:

- Background: What is a Generative Model?  
<https://developers.google.com/machine-learning/gan/generative>
- Gen AI for Developers  
<https://cloud.google.com/ai/generative-ai#section-3>
- Ask a Techspert: What is generative AI?  
<https://blog.google/inside-google/googlers/ask-a-techspert/what-is-generative-ai/>
- What is generative AI?  
<https://www.mckinsey.com/featured-insights/mckinsey-explainers/what-is-generative-ai>

- Building the most open and innovative AI ecosystem:  
<https://cloud.google.com/blog/products/ai-machine-learning/building-an-open-generative-ai-partner-ecosystem>
- Generative AI is here. Who Should Control It?  
<https://www.nytimes.com/2022/10/21/podcasts/hard-fork-generative-artificial-intelligence.html>
- Stanford U & Google's Generative Agents Produce Believable Proxies of Human Behaviors:  
<https://syncedreview.com/2023/04/12/stanford-u-googles-generative-agents-produce-believable-proxies-of-human-behaviours/>
- Generative AI: Perspectives from Stanford HAI:  
[https://hai.stanford.edu/sites/default/files/2023-03/Generative\\_AI\\_HAI\\_Perspectives.pdf](https://hai.stanford.edu/sites/default/files/2023-03/Generative_AI_HAI_Perspectives.pdf)
- Generative AI at Work:  
[https://www.nber.org/system/files/working\\_papers/w31161/w31161.pdf](https://www.nber.org/system/files/working_papers/w31161/w31161.pdf)
- The future of generative AI is niche, not generalized:  
<https://www.technologyreview.com/2023/04/27/1072102/the-future-of-generative-ai-is-niche-not-generalized/>
- The implications of Generative AI for businesses:  
<https://www2.deloitte.com/us/en/pages/consulting/articles/generative-artificial-intelligence.html>
- Proactive Risk Management in Generative AI:  
<https://www2.deloitte.com/us/en/pages/consulting/articles/responsible-use-of-generative-ai.html>
- How Generative AI Is Changing Creative Work:  
<https://hbr.org/2022/11/how-generative-ai-is-changing-creative-work>

#### **Additional Resources:**

- Attention is All You Need: <https://research.google/pubs/pub46201/>
- Transformer: A Novel Neural Network Architecture for Language Understanding:  
<https://ai.googleblog.com/2017/08/transformer-novel-neural-network.html>
- Transformer on Wikipedia:  
[https://en.wikipedia.org/wiki/Transformer\\_\(machine\\_learning\\_model\)#:~:text=Transformers%20were%20introduced%20in%202017,allowing%20training%20on%20larger%20datasets.](https://en.wikipedia.org/wiki/Transformer_(machine_learning_model)#:~:text=Transformers%20were%20introduced%20in%202017,allowing%20training%20on%20larger%20datasets.)
- What is Temperature in NLP? <https://lukesalamone.github.io/posts/what-is-temperature/>
- Model Garden: <https://cloud.google.com/model-garden>
- Auto-generated Summaries in Google Docs:  
<https://ai.googleblog.com/2022/03/auto-generated-summaries-in-google-docs.html>