IS41720-Language Models and Methods Assignment 2: Language Model Literacy Campaign

Design Rationale for Language Model Literacy Website

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1. Target Audience: Startup Founders and Entrepreneurs

This educational resource is specifically designed for startup founders and entrepreneurs. These individuals are increasingly exploring the capabilities of large language models (LLMs) to assist with a range of business tasks, including but not limited to content generation, customer support automation, product description writing, and internal communication optimization. Despite their enthusiasm for adopting generative AI technologies, many startup founders do not come from technical backgrounds. They often lack a foundational understanding of how language models work, what their limitations are, and what ethical considerations are involved in deploying AI features in public-facing products. This creates a critical gap between capability and responsible usage.

Our rationale for choosing this audience is grounded in their need for practical, fast, and actionable knowledge that supports their growth mindset while preventing misuse. Founders are usually time-constrained and outcome-focused, making them ideal candidates for a streamlined, interactive educational tool that demystifies AI without overwhelming them with theory. Additionally, because many startups use AI early in the product lifecycle, encouraging ethical reflection from the outset can lead to more inclusive, trustworthy, and sustainable AI deployments.

2. Learning Objectives

The resource is built with the goal of promoting AI literacy in a format that fits the priorities and workflow of startup founders. We developed a set of learning objectives that align with both course themes and the realities of entrepreneurial environments. These objectives include the following:

1. Help users understand what large language models are and how they function at a high level, without requiring technical background knowledge.
2. Teach practical skills in writing effective prompts that yield better outputs, which is critical for generating customer-facing or operational content.
3. Explain the concept of temperature and sampling in LLMs to help users control tone and creativity in their outputs.
4. Alert users to the risk of hallucinations and emphasize the importance of fact-checking and output review before use.
5. Provide tools to estimate and manage API usage costs, which is a major concern for cost-conscious startups.
6. Encourage ethical thinking through an embedded review checklist that considers bias, fairness, and user transparency.

7. Reinforce core concepts with a glossary and frequently asked questions to improve accessibility.

3. Key Concepts and Issues Covered

To meet our objectives, we included the following core concepts, directly tied to lecture content and our target audience's context:

Concept	**Purpose for Founders**
What is an LLM	Ground users in foundational knowledge
Prompt Engineering	Improve LLM interaction quality
Temperature & Sampling	Explain tone/style control in outputs
Hallucination	Warn about misinformation risks
API Cost Optimization	Help manage budget and scale affordably
Ethics and Bias	Guide fair and transparent AI use
Glossary	Reinforce terms already introduced

4. Approach to Designing AI Educational Materials

Format

We used Streamlit to build an interactive, modular web app. This tool was ideal because:

- It allows for quick prototyping of data and text interaction
- It supports input fields, sliders, and toggles that mimic real-world usage
- It's accessible to non-technical audiences

Tone

The tone is professional yet approachable, avoiding technical jargon while not being overly casual. Wherever possible, concepts are explained using startup-friendly metaphors.

Structure

The site is organized into logically sequenced pages:

- Home: Overview and navigation
- Prompt Engineering
- Temperature & Sampling
- Hallucinations
- Ethics & Bias
- Cost Optimization
- Interactive Use Cases
- Download Toolkit

- Glossary & Quiz
- Feedback Form

We also implemented:

- Progress tracking checkboxes (“Mark as Complete”)
- Expand/Collapse All toggles for skim ability
- Interactive demos to reinforce key ideas
- Quizzes and cheat sheets for self-assessment and retention

5. Tackling the Challenges of AI Literacy for Startup Founders

Challenges:

Challenge	**How We Addressed It**
Time-starved audience	Short, focused tabs with key takeaways and examples
Risk of oversimplifying complex ideas	Used analogies, visual sliders, and scenario-based learning
Explaining hallucinations ethically	Included real examples and mitigation strategies
Making ethics practical	Added a checklist template founders can use for product reviews
Preventing passive consumption	Designed interactive sections like “Try it Yourself”, quizzes, and real use case demos

6. Limitations and Reflections

Limitations:

- Simulated responses are hardcoded; in production, these would call a real API
- We didn’t cover advanced topics like embeddings or fine-tuning, to stay focused
- Bias handling is introduced but not exhaustively covered (e.g., gender, geographic bias analysis would need deeper tooling)
- Cost examples are simplified (no token visualization or rate table interactivity)

Reflections:

- Balancing clarity and accuracy were our biggest design tension — e.g., explaining hallucinations without misrepresenting LLM intelligence.
- The ethical review template was challenging to simplify, but necessary to translate ethical theory into a usable practice.
- The feedback and quiz sections enhanced user reflection and reinforced core messages effectively.

7. Conclusion

In conclusion, the Founder's Interactive Guide to Language Models offers a comprehensive, practical, and ethical approach to teaching non-expert users how to leverage LLMs effectively. From core concepts like prompt engineering and temperature to key risks like hallucination and bias, the resource provides structured, relevant, and engaging content that directly supports early-stage product innovation. The tool promotes active learning through simulation, reflection through interactive questions, and self-guided exploration via use cases and FAQs.

By creating a resource that is simultaneously informative, interactive, and actionable, we have aimed to close the knowledge gap that exists between AI technology and startup adoption. In doing so, we not only fulfil the learning objectives set out by the course but also contribute meaningfully to a growing need for AI literacy in entrepreneurial communities.

Note:
This design rationale supports the educational resource titled "Founders' Interactive Guide to Language Models," which is available online at:
https://large-language-models-guide.streamlit.app

8. External Resources and References

We used the following materials in addition to lecture slides:

- OpenAI. (2023). *Prompt engineering best practices*. OpenAI Documentation. https://platform.openai.com/docs/guides/prompt-generation
- Ji, Z., Lee, N., Frieske, R., Yu, T., Su, D., Xu, Y., ... & Fung, P. (2023). *Survey of Hallucination in Natural Language Generation*. ACM Computing Surveys. https://dl.acm.org/doi/abs/10.1145/3571730
- OpenAI. (2023). *How temperature and top-p sampling affect output*. https://community.openai.com/t/cheat-sheet-mastering-temperature-and-top-p-in-chatgpt-api/172683
- Bender, E. M., Gebru, T., McMillan-Major, A., & Shmitchell, S. (2021). *On the Dangers of Stochastic Parrots: Can Language Models Be Too Big?*. Proceedings of the 2021 ACM Conference on Fairness, Accountability, and Transparency (FAccT '21). https://dl.acm.org/doi/10.1145/3442188.3445922
- CB Insights. (2023). *State of AI in Startups Report*. https://www.cbinsights.com/research/ai-agent-market-map/