

Assignment 6, Survey report on Generative AI with a specific topic

Requirements:

You are suggested to pick a specific topic on the LLAMA based generative AI and write a survey report.

1, Topics including:

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| 1 | a) modeling architecture: for example MOE, latest trend of transformer-based architecture and etc. |
| 2 | b) fine-tuning and auxiliary technologies: e.g, Knowledge Distillation, Multimodal learning, RLFT, Domain Adaptation and etc. |
| 3 | c) LLAMA-based applications: Agent/Multi-agent, RAG |

2, Survey is suggested to considering the following:

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| 1 | 1. Technology Overview |
| 2 | |
| 3 | Definition and Background: Provide a clear definition of the technology and its historical context, explaining how it emerged and evolved. |
| 4 | |
| 5 | Key Concepts: Outline the fundamental concepts and principles that underpin the technology. |
| 6 | |
| 7 | Relationship to Other Technologies: Describe how the technology relates to and interacts with other relevant technologies. |
| 8 | |
| 9 | 2. Technical Details |
| 10 | |
| 11 | Core Components: Detail the main components or modules that make up the technology and their functions. |
| 12 | |
| 13 | Working Principles: Explain the mechanisms and processes by which the technology operates. |
| 14 | |
| 15 | Technical Specifications: Include technical specifications, standards, and protocols associated with the technology. |
| 16 | |
| 17 | 3. Implementation Considerations |
| 18 | |
| 19 | Implementation Steps: Outline the typical steps or process for implementing the technology. |
| 20 | |
| 21 | Resource Requirements: Discuss the resources needed for implementation, such as hardware, software, personnel, and time. |
| 22 | |
| 23 | Best Practices: Provide recommended practices and guidelines for successful implementation. |
| 24 | |
| 25 | 4. Current Status and Trends |
| 26 | |
| 27 | Current Adoption Level: Assess the current level of adoption of the technology across different industries and regions. |
| 28 | |
| 29 | Emerging Trends: Identify emerging trends and developments in the technology field. |
| 30 | |

31	5. Future Outlook
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33	Potential Applications: Explore potential future applications and use cases for the technology.
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35	Challenges and Opportunities: Analyze the challenges and opportunities that may arise in the future development of the technology.
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37	6. Case Studies/Examples
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39	Successful Implementations: Present case studies or examples of successful implementations of the technology.
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41	Lessons Learned: Summarize lessons learned from these implementations to provide practical insights.
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43	7. Challenges and Limitations
44	
45	Technical Challenges: Identify technical challenges and limitations that may be encountered when using the technology.
46	
47	Non-Technical Challenges: Discuss non-technical challenges such as organizational, cultural, or economic factors.
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49	8. Opportunities for Improvement/Innovation
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51	Research and Development: Highlight areas where further research and development could enhance the technology.
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53	Innovation Potential: Explore potential innovations that could expand the capabilities and applications of the technology.

3, Recommend to focus on a topic specific rather a general.

