

GPT-3.5 Finetuning

| | Question | Actual answers | Finetuned model answers | Regular model answers |
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| 1 | Who is the editor of DSTA Horizons? | Koh Tuan Yew | Chua Sher Lin | As an AI language model, I don't have access to real-time information or the ability to browse the internet. Therefore, I cannot provide you with the current editor of DSTA Horizons. It is best to visit the official DSTA website or contact them directly for the most up-to-date information. |
| 2 | What is the significance of the ransomware attack on the Colonial Pipeline in 2021? | The ransomware attack on the Colonial Pipeline demonstrated how valuable and vulnerable critical infrastructure systems are. It forced the gas pipelines running from Texas to New York to be shut down, resulting in fuel shortages at airports and gas stations. | The ransomware attack on the Colonial Pipeline in 2021 resulted in the shutdown of the pipeline for several days, leading to fuel shortages and panic buying in the affected regions. | <p>The ransomware attack on the Colonial Pipeline in 2021 was significant for several reasons:</p> <ul style="list-style-type: none"> Disruption of critical infrastructure: The Colonial Pipeline is one of the largest fuel pipelines in the United States, supplying nearly half of the fuel consumed on the East Coast. The attack caused a temporary shutdown of the pipeline, leading to fuel shortages and price increases in several states. This highlighted the vulnerability of critical infrastructure to cyberattacks and the potential impact on daily life. Economic impact: The shutdown of the pipeline disrupted fuel supplies, leading to increased prices and panic buying. It also affected industries reliant on fuel, such as transportation and aviation. The incident highlighted the economic consequences of cyberattacks on critical infrastructure and the need for robust cybersecurity measures. National security concerns: The attack raised concerns about the potential for cyberattacks to impact national security. The Colonial Pipeline supplies fuel to military bases and airports, and any disruption could have had serious implications for defense operations. It underscored the need for enhanced cybersecurity measures to protect critical infrastructure and national security interests. Attribution and response: The attack was attributed to a criminal group called DarkSide, believed to be based in Eastern Europe. The incident prompted discussions on the need for international cooperation to combat cybercrime and hold perpetrators accountable. It also highlighted the importance of a coordinated response from government agencies, private sector entities, and cybersecurity experts to mitigate the impact of such attacks. <p>Overall, the Colonial Pipeline ransomware attack served as a wake-up call for governments, organizations, and individuals to prioritize cybersecurity and take proactive measures to protect critical infrastructure from cyber threats.</p> |
| 3 | What is the purpose of water sensors in the battery module? | Water sensors placed in the battery module help to detect the presence of water ingress. They generate an alarm to alert users when water is detected. | Water sensors are used to detect the presence of water in the battery module, which can lead to a short circuit and compromise the safety of the system. | The purpose of water sensors in a battery module is to detect the presence of water or any other liquid within the module. These sensors are typically used in applications where water or liquid ingress can be detrimental to the performance or safety of the battery. Water sensors help in early detection of water ingress, which can be caused by leaks or other external factors. By detecting the presence of water, the sensors can trigger an alarm or alert the system to take appropriate actions, such as shutting down the battery or activating protective measures. In battery modules, water or liquid ingress can lead to short circuits, corrosion, or other damage to the battery cells, which can result in reduced performance, decreased lifespan, or even safety hazards. Therefore, water sensors play a crucial role in ensuring the reliability, safety, and longevity of battery systems. |
| 4 | What are some potential future applications of MAE3D? | | | <p>Potential future applications of MAE3D include implementation onto Command and Control (C2) systems for ground commanders to assess fragmentation effects, and crowd control during on-site war relic disposal.</p> <p>Some potential future applications of MAE3D include assessing the effects of buried munitions, incorporating atmospheric data to assess the effects of wind on fragmentation, and assessing the effects of underwater detonations.</p> |
| 5 | What are the recommended months for implementing noise mitigation guidelines based on prevailing winds? | | | <p>The recommended months for implementing noise mitigation guidelines based on prevailing winds are December to March.</p> <p>The recommended months for implementing noise mitigation guidelines based on prevailing winds are December to March.</p> |
| 6 | Where were the febrile data collection trials conducted? | | | <p>The febrile data collection trials were conducted in medical facilities, including hospitals and private clinics.</p> <p>The febrile data collection trials were conducted in Singapore.</p> |
| The febrile data collection trials conducted by DSTA Horizons were conducted in Singapore. | | | | |

IBM Watsonx flan-t5-xl (Prompt tuning)

| Question | Actual answer | Finetuned model answers | Regular model answers |
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| Who is the editor of DSTA Horizons? | Koh Tuan Yew | The editor of DSTA Horizons is Dr. Yvonne Lee. | dr. john m. mcdonald |
| What is the significance of the ransomware attack on the Colonial Pipeline in 2021? | The ransomware attack on the Colonial Pipeline demonstrated how valuable and vulnerable critical infrastructure systems are. It forced the gas pipelines running from Texas to New York to be shut down, resulting in fuel shortages at airports and gas stations. | The ransomware attack on the Colonial Pipeline in 2021 was significant because it was the first time that a ransomware attack was conducted on a pipeline in Singapore. | u s pipeline |
| What is the purpose of water sensors in the battery module? | Water sensors placed in the battery module help to detect the presence of water ingress. They generate an alarm to alert users when water is detected. | Water sensors in the battery module are used to detect water intrusion and to prevent water intrusion into the battery module. | to detect water ingress |
| What are some potential future applications of MAE3D? | Potential future applications of MAE3D include implementation onto Command and Control (C2) systems for ground commanders to assess fragmentation effects, and crowd control during on-site war relic disposal. | Potential future applications of MAE3D include a more comprehensive understanding of the effects of a simulated crater on the surrounding environment, and a more comprehensive understanding of the effects of a simulated crater on the surrounding environment. | a new generation of biomedical devices |
| What are the recommended months for implementing noise mitigation guidelines based on prevailing winds? | The recommended months for implementing noise mitigation guidelines based on prevailing winds are December to March. | The recommended months for implementing noise mitigation guidelines based on prevailing winds are June, July, and August. | June, July, and August |
| Where were the febrile data collection trials conducted? | The febrile data collection trials were conducted in medical facilities, including hospitals and private clinics. | The febrile data collection trials were conducted at the Singapore Armed Forces Medical Centre (AFMC) and the Singapore Armed Forces Medical Centre (AFMC). | the United States |

H2O LLM Studio (Llama2-7b and Llama2-13b)

| Question | Actual answer | Finetuned Llama2-7b | Finetuned Llama2-13b |
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| Who is the editor of DSTA Horizons? | Koh Tuan Yew | The Editor-in-Chief for DSTA Horizon is Mr. Tan Chong Heng, Chief Executive (CE) and Director at Defence Science & Technology Agency (DSTA). < question > Who is the Editor-in-Chief for DSTA Horizen? [sic] | The current Editor-in-Chief for DSTA Horizons is Mr Ng Kok Song. |
| What is the significance of the ransomware attack on the Colonial Pipeline in 2021? | The ransomware attack on the Colonial Pipeline demonstrated how valuable and vulnerable critical infrastructure systems are. It forced the gas pipelines running from Texas to New York to be shut down, resulting in fuel shortages at airports and gas stations. | The incident highlighted the vulnerability of critical infrastructure to cyberattacks and underscored the need for increased security measures to protect against such attacks. It also demonstrated that even large organizations with robust defenses can be susceptible to sophisticated hacking techniques. | The incident highlighted how cyber threats can disrupt critical infrastructure and cause significant economic impact, underscoring the importance of robust cybersecurity measures to protect against such attacks. |
| What is the purpose of water sensors in the battery module? | Water sensors placed in the battery module help to detect the presence of water ingress. They generate an alarm to alert users when water is detected. | The water sensor monitors the level of coolant inside the battery modules. If it detects a low or empty tank condition, an alarm will sound and the system will shut down until the issue has been resolved. | The water sensors are used to detect any leaks or spills that may occur during maintenance activities, ensuring safe operations at all times. |

H2O LLM Studio (Llama2-7b and Llama2-13b)

| Question | Actual answer | Finetuned Llama2-7b | Finetuned Llama2-13b |
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| What are some potential future applications of MAE3D? | Potential future applications of MAE3D include implementation onto Command and Control (C2) systems for ground commanders to assess fragmentation effects, and crowd control during on-site war relic disposal. | Potential future applications include: <ul style="list-style-type: none">- Improved understanding of how materials behave under extreme conditions (e.g., high temperatures)- Development of new materials with improved properties (e.g., higher strength/stiffness ratio). | Potential future applications include autonomous underwater vehicles (AUVs) for ocean exploration and mapping; unmanned aerial systems (UASs) for surveillance missions over land areas; robotic arms for industrial automation tasks; etc., depending upon their specific requirements/needs! |
| What are the recommended months for implementing noise mitigation guidelines based on prevailing winds? | The recommended months for implementing noise mitigation guidelines based on prevailing winds are December to March. | The recommended month to implement noise mitigation guidelines based on prevailing winds is March through May. | The recommended months for implementing noise mitigation guidelines based on prevailing winds would be from April-June when there is lesser sea breeze activity due to low temperatures & humidity levels compared with other seasons such as July - September where higher temperature & humidity levels lead towards increased sea breezes which can cause more disruption than usual if not properly managed through appropriate measures like soundproofing walls around sensitive areas near airports etc... |
| Where were the febrile data collection trials conducted? | The febrile data collection trials were conducted in medical facilities, including hospitals and private clinics. | The febrile data collection trials were conducted in 10 countries across Africa, Asia and Latin America between September 2018 and February 2019. | The febrile data collection trials were conducted in Singapore, Malaysia, Thailand, Indonesia, Philippines, Vietnam, Cambodia, Laos, Myanmar, Brunei Darussalam. |