Foundation Model Evaluations with SageMaker Clarify

Evaluation Report

Task: Question Answering

This section shows the overall scores for each successful evaluation.

Q&A Accuracy

Measures how well the model performs in question answering (Q&A) tasks.

Dataset	F1 Over Words Score	Exact Match Score	Quasi Exact Match Score	Precision Over Words Score	Recall Over Words Score	BERTScore
qa_accuracy- byo-dataset-0	0.227357	0.0	0.0	0.219389	0.286559	0.471066

Evaluation Job Configuration

Parameter	Value
Model	meta-textgeneration-llama-3-2-3b-instruct
Model Type	SageMaker Jumpstart Endpoint
Inference Parameters	max_new_tokens:256, top_p:0.7, temperature:0.5
Evaluation Methods	Q&A Accuracy
Datasets	qa_accuracy-byo-dataset-0

Detailed Evaluation Results

Below are the selected model evaluations:

Q&A Accuracy

This evaluation measures how well the model performs in question answering (QA) tasks, both in the closed-book and the open-book setting. In open-book QA the model is presented with a reference text containing the answer, i.e., the model's task is to extract the correct answer from the text. In the closed-book case the model is not presented with any additional information but uses its own world knowledge to answer the question. You selected to evaluate your model with customer-provided (qa_accuracy-byo-dataset-0) datasets.

Custom Dataset: qa accuracy-byo-dataset-0

We sampled 50 records out of 50 in the full dataset.

Prompt Template: \$model input

F1 Over Words Score

Numerical score between 0 (worst) and 1 (best). F1-score is the harmonic mean of precision and recall. It is computed as follows: precision = true positives / (true positives + false positives) and recall = true positives / (true positives + false negatives). Then F1 = 2 (precision * recall)/(precision + recall).

Average Score: 0.22735665832141408

Top 5 examples with highest scores:

Model Input	Model Output	Target Output	F1 Score	Exact Match Score	Quasi Exact Match Score	Precision Over Words	Recall Over Words	BERTScore
How are winners determined in AWS DeepRacer tournaments?	In AWS DeepRacer tournaments, winners are typically determined by a combination of factors including: 1. Lap Time: The team with the fastest overall lap time across all qualifying and final []	Winners in AWS DeepRacer tournaments are typically determined based on the fastest lap times achieved by their models. In some cases, additional factors such as consistency across multiple laps []	0.495726	0.0	0.0	0.391892	0.674419	0.657746
How does the AWS DeepRacer Student League contribute to community participation?	The AWS DeepRacer Student League encourages students to participate in autonomous racing, fostering a community of learners who develop skills in computer vision, machine learning, and robotics. []	The AWS DeepRacer Student League encourages student participation by offering exclusive competitions, learning resources, and mentorship opportunities. It promotes STEM education, provides a []	0.457831	0.0	0.0	0.422222	0.5	0.743755

What is the primary purpose of AWS DeepRacer tournaments?	### Input: Understanding core objectives of AWS DeepRacer tournaments ### Response: The primary purpose of AWS DeepRacer tournaments is to foster community engagement, encourage learning, and []	AWS DeepRacer tournaments are designed to provide a competitive platform for participants to showcase their reinforcement learning skills. These events allow racers to test their models against []	0.457143	0.0	0.0	0.484848	0.432432	0.6464
How does the choice of optimizer affect AWS DeepRacer model training and performance?	Optimizers in DeepRacer determine how the model learns from data and updates parameters. Common choices include Adam, SGD, and Adagrad. Adam often performs well due to its adaptive learning []	The choice of optimizer in AWS DeepRacer affects how the model updates its parameters during training. Different optimizers like Adam, SGD, or RMSprop have varying convergence rates and []	0.44898	0.0	0.0	0.44	0.458333	0.665846

What is the significance of the AWS DeepRacer Community Race Organizer program?	The program aims to foster a community of race organizers, providing them with necessary resources and support to host successful community races. This includes access to AWS DeepRacer cars, []	The AWS DeepRacer Community Race Organizer program empowers enthusiasts to host their own DeepRacer events. It provides resources, guidelines, and support for organizing local races, workshops, []	0.422535	0.0	0.0	0.454545	0.394737	0.712547
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Model Input	Model Output	Target Output	F1 Score	Exact Match Score	Quasi Exact Match Score	Precision Over Words	Recall Over Words	BERTScore
How does adjusting the learning rate impact model training in AWS DeepRacer?		Adjusting the learning rate in AWS DeepRacer affects how quickly the model learns from experiences. A higher learning rate can lead to faster convergence but may result in overshooting optimal []	0.0	0.0	0.0	0.0	0.0	0.0
How can hyperparameter tuning improve AWS DeepRacer model performance?		Hyperparameter tuning in AWS DeepRacer involves adjusting variables like learning rate, batch size, and entropy to optimize model performance. Systematic experimentation with these parameters []	0.0	0.0	0.0	0.0	0.0	0.0
How can transfer learning be applied to improve AWS DeepRacer model performance?		Transfer learning in AWS DeepRacer involves using a pre-trained model as a starting point for a new track or racing condition. This technique can significantly reduce training time and improve []	0.0	0.0	0.0	0.0	0.0	0.0

What strategies can be employed to prevent overfitting in AWS DeepRacer models?	To prevent overfitting in AWS DeepRacer, strategies include using regularization techniques, implementing early stopping, and ensuring diverse training data. Varying track conditions and []	0.0	0.0	0.0	0.0	0.0	0.0
What role do sponsors play in AWS DeepRacer tournaments?	Sponsors in AWS DeepRacer tournaments often provide prizes, host events, or offer special challenges within the competition. They may also contribute to the overall organization and promotion of []	0.0	0.0	0.0	0.0	0.0	0.0

Exact Match Score

An exact match score is a binary score where 1 indicates the model output and answer match exactly and 0 indicates otherwise.

Average Score: 0.0

Top 5 examples with highest scores:

Model Input	Model Output	Target Output	F1 Score	Exact Match Score	Quasi Exact Match Score	Precision Over Words	Recall Over Words	BERTScore
What is the importance of track familiarization in AWS DeepRacer racing strategy?	Track familiarization allows teams to optimize their racing lines, understand track characteristics, and develop more effective braking and acceleration strategies before actual competition.	Track familiarization is crucial in AWS DeepRacer racing as it helps optimize the reward function and training parameters. Understanding track features like turns, straights, and obstacles []	0.285714	0.0	0.0	0.428571	0.214286	0.679501
How does adjusting the learning rate impact model training in AWS DeepRacer?		Adjusting the learning rate in AWS DeepRacer affects how quickly the model learns from experiences. A higher learning rate can lead to faster convergence but may result in overshooting optimal []	0.0	0.0	0.0	0.0	0.0	0.0
Explain the concept of action space in AWS DeepRacer and its impact on racing performance.	Action space in DeepRacer refers to the set of possible inputs that can be provided to the vehicle to control its movement. It includes parameters such as acceleration, braking force, steering []	Action space in AWS DeepRacer defines the range of steering angles and speeds available to the car. A larger action space offers more granular control but increases training complexity and time. []	0.298701	0.0	0.0	0.2	0.589744	0.667034

How can hyperparameter tuning improve AWS DeepRacer model performance?		Hyperparameter tuning in AWS DeepRacer involves adjusting variables like learning rate, batch size, and entropy to optimize model performance. Systematic experimentation with these parameters []	0.0	0.0	0.0	0.0	0.0	0.0
What is the role of the discount factor in AWS DeepRacer's reinforcement learning algorithm?	The discount factor determines how much future rewards are considered when making decisions.	The discount factor in AWS DeepRacer determines the importance of future rewards in the learning process. A higher discount factor encourages long-term planning, while a lower value focuses on []	0.226415	0.0	0.0	0.5	0.146341	0.65751

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Explain the concept of action space in AWS DeepRacer and its impact on racing performance.	Action space in DeepRacer refers to the set of possible inputs that can be provided to the vehicle to control its movement. It includes parameters such as acceleration, braking force, steering []	Action space in AWS DeepRacer defines the range of steering angles and speeds available to the car. A larger action space offers more granular control but increases training complexity and time. []	0.298701	0.0	0.0	0.2	0.589744	0.667034

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Quasi Exact Match Score

Similar as above, but both model output and answer are normalised first by removing any articles and punctuation. E.g., 1 also for predicted answers "Antarctica." or "the Antarctica" .

Average Score: 0.0

Top 5 examples with highest scores:

Model Input	Model Output	Target Output	F1 Score	Exact Match Score	Quasi Exact Match Score	Precision Over Words	Recall Over Words	BERTScore
What is the importance of track familiarization in AWS DeepRacer racing strategy?	Track familiarization allows teams to optimize their racing lines, understand track characteristics, and develop more effective braking and acceleration strategies before actual competition.	Track familiarization is crucial in AWS DeepRacer racing as it helps optimize the reward function and training parameters. Understanding track features like turns, straights, and obstacles []	0.285714	0.0	0.0	0.428571	0.214286	0.679501
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Explain the concept of action space in AWS DeepRacer and its impact on racing performance.	Action space in DeepRacer refers to the set of possible inputs that can be provided to the vehicle to control its movement. It includes parameters such as acceleration, braking force, steering []	Action space in AWS DeepRacer defines the range of steering angles and speeds available to the car. A larger action space offers more granular control but increases training complexity and time. []	0.298701	0.0	0.0	0.2	0.589744	0.667034

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Explain the concept of action space in AWS DeepRacer and its impact on racing performance.	Action space in DeepRacer refers to the set of possible inputs that can be provided to the vehicle to control its movement. It includes parameters such as acceleration, braking force, steering []	Action space in AWS DeepRacer defines the range of steering angles and speeds available to the car. A larger action space offers more granular control but increases training complexity and time. []	0.298701	0.0	0.0	0.2	0.589744	0.667034

How can hyperparameter tuning improve AWS DeepRacer model performance?		Hyperparameter tuning in AWS DeepRacer involves adjusting variables like learning rate, batch size, and entropy to optimize model performance. Systematic experimentation with these parameters []	0.0	0.0	0.0	0.0	0.0	0.0
What is the role of the discount factor in AWS DeepRacer's reinforcement learning algorithm?	The discount factor determines how much future rewards are considered when making decisions.	The discount factor in AWS DeepRacer determines the importance of future rewards in the learning process. A higher discount factor encourages long-term planning, while a lower value focuses on []	0.226415	0.0	0.0	0.5	0.146341	0.65751

Precision Over Words Score

The precision score is the fraction of words in the model output that are also found in the target output.

Average Score: 0.21938896025397486

Top 5 examples with highest scores:

Model Input	Model Output	Target Output	F1 Score	Exact Match Score	Quasi Exact Match Score	Precision Over Words	Recall Over Words	BERTScore
What role do AWS DeepRacer Community Ambassadors play in fostering engagement?	They help promote the platform, provide support, and share expertise with the community.	AWS DeepRacer Community Ambassadors are experienced members who volunteer to support and mentor others. They organize local events, provide guidance, and share their expertise with the []	0.32	0.0	0.0	0.727273	0.205128	0.733838
What is the role of the discount factor in AWS DeepRacer's reinforcement learning algorithm?	The discount factor determines how much future rewards are considered when making decisions.	The discount factor in AWS DeepRacer determines the importance of future rewards in the learning process. A higher discount factor encourages long-term planning, while a lower value focuses on []	0.226415	0.0	0.0	0.5	0.146341	0.65751
What is the primary purpose of AWS DeepRacer tournaments?	### Input: Understanding core objectives of AWS DeepRacer tournaments ### Response: The primary purpose of AWS DeepRacer tournaments is to foster community engagement, encourage learning, and []	AWS DeepRacer tournaments are designed to provide a competitive platform for participants to showcase their reinforcement learning skills. These events allow racers to test their models against []	0.457143	0.0	0.0	0.484848	0.432432	0.6464

What is the significance of the AWS DeepRacer Community Race Organizer program?	The program aims to foster a community of race organizers, providing them with necessary resources and support to host successful community races. This includes access to AWS DeepRacer cars, []	The AWS DeepRacer Community Race Organizer program empowers enthusiasts to host their own DeepRacer events. It provides resources, guidelines, and support for organizing local races, workshops, []	0.422535	0.0	0.0	0.454545	0.394737	0.712547
How can gamified AI/ML platforms bridge the gap between theoretical knowledge and practical application?	### Input: Practical Application ### Response: Gamified AI/ ML platforms can bridge the gap by providing interactive simulations, real-world case studies, and hands-on challenges that help []	Gamified AI/ML platforms can provide hands-on experience in applying theoretical concepts to real-world scenarios. They offer a safe environment for experimentation, allowing students to see []	0.4	0.0	0.0	0.441176	0.365854	0.671534

Model Input	Model Output	Target Output	F1 Score	Exact Match Score	Quasi Exact Match Score	Precision Over Words	Recall Over Words	BERTScore
How does adjusting the learning rate impact model training in AWS DeepRacer?		Adjusting the learning rate in AWS DeepRacer affects how quickly the model learns from experiences. A higher learning rate can lead to faster convergence but may result in overshooting optimal []	0.0	0.0	0.0	0.0	0.0	0.0
How can hyperparameter tuning improve AWS DeepRacer model performance?		Hyperparameter tuning in AWS DeepRacer involves adjusting variables like learning rate, batch size, and entropy to optimize model performance. Systematic experimentation with these parameters []	0.0	0.0	0.0	0.0	0.0	0.0
How can transfer learning be applied to improve AWS DeepRacer model performance?		Transfer learning in AWS DeepRacer involves using a pre-trained model as a starting point for a new track or racing condition. This technique can significantly reduce training time and improve []	0.0	0.0	0.0	0.0	0.0	0.0

What strategies can be employed to prevent overfitting in AWS DeepRacer models?	To prevent overfitting in AWS DeepRacer, strategies include using regularization techniques, implementing early stopping, and ensuring diverse training data. Varying track conditions and []	0.0	0.0	0.0	0.0	0.0	0.0
How do team tournaments differ from individual tournaments in AWS DeepRacer?	Team tournaments in AWS DeepRacer allow groups of participants to collaborate and compete together. These events often involve sharing knowledge, dividing tasks, and combining individual []	0.0	0.0	0.0	0.0	0.0	0.0

Recall Over Words Score

The recall score is the fraction of words in the target output that are also found in the model output.`

Average Score: 0.2865588090244189

Top 5 examples with highest scores:

Model Input	Model Output	Target Output	F1 Score	Exact Match Score	Quasi Exact Match Score	Precision Over Words	Recall Over Words	BERTScore
How do AWS DeepRacer forums contribute to community engagement?	AWS DeepRacer forums serve as a platform for users to share experiences, ask questions, and receive assistance from the community and AWS support teams. This enables real- time problem- solving []	AWS DeepRacer forums serve as a platform for community members to ask questions, share experiences, and discuss racing strategies. They facilitate knowledge exchange, problem- solving, and []	0.4	0.0	0.0	0.27907	0.705882	0.727435
How are winners determined in AWS DeepRacer tournaments?	In AWS DeepRacer tournaments, winners are typically determined by a combination of factors including: 1. Lap Time: The team with the fastest overall lap time across all qualifying and final []	Winners in AWS DeepRacer tournaments are typically determined based on the fastest lap times achieved by their models. In some cases, additional factors such as consistency across multiple laps []	0.495726	0.0	0.0	0.391892	0.674419	0.657746

How has the structure of AWS DeepRacer tournaments evolved over time?	AWS DeepRacer tournaments have evolved through several stages: 1. **Initial Launch (2018)**: The first tournament introduced a simple racing format with basic rules and a small prize pool. 2. []	AWS DeepRacer tournaments have evolved to include more diverse formats, such as head-to- head races and obstacle courses. The introduction of the virtual circuit has expanded accessibility, []	0.335664	0.0	0.0	0.230769	0.615385	0.544695
Explain the concept of action space in AWS DeepRacer and its impact on racing performance.	Action space in DeepRacer refers to the set of possible inputs that can be provided to the vehicle to control its movement. It includes parameters such as acceleration, braking force, steering []	Action space in AWS DeepRacer defines the range of steering angles and speeds available to the car. A larger action space offers more granular control but increases training complexity and time. []	0.298701	0.0	0.0	0.2	0.589744	0.667034

Model Input	Model Output	Target Output	F1 Score	Exact Match Score	Quasi Exact Match Score	Precision Over Words	Recall Over Words	BERTScore
How does adjusting the learning rate impact model training in AWS DeepRacer?		Adjusting the learning rate in AWS DeepRacer affects how quickly the model learns from experiences. A higher learning rate can lead to faster convergence but may result in overshooting optimal []	0.0	0.0	0.0	0.0	0.0	0.0
How can hyperparameter tuning improve AWS DeepRacer model performance?		Hyperparameter tuning in AWS DeepRacer involves adjusting variables like learning rate, batch size, and entropy to optimize model performance. Systematic experimentation with these parameters []	0.0	0.0	0.0	0.0	0.0	0.0
How can transfer learning be applied to improve AWS DeepRacer model performance?		Transfer learning in AWS DeepRacer involves using a pre-trained model as a starting point for a new track or racing condition. This technique can significantly reduce training time and improve []	0.0	0.0	0.0	0.0	0.0	0.0

What strategies can be employed to prevent overfitting in AWS DeepRacer models?	To prevent overfitting in AWS DeepRacer, strategies include using regularization techniques, implementing early stopping, and ensuring diverse training data. Varying track conditions and []	0.0	0.0	0.0	0.0	0.0	0.0
What role do sponsors play in AWS DeepRacer tournaments?	Sponsors in AWS DeepRacer tournaments often provide prizes, host events, or offer special challenges within the competition. They may also contribute to the overall organization and promotion of []	0.0	0.0	0.0	0.0	0.0	0.0

BERTScore

BERTScore uses a second ML model (from the BERT family) to compute sentence embeddings and compare their similarity.

Average Score: 0.4710659831762314

Top 5 examples with highest scores:

Model Input	Model Output	Target Output	F1 Score	Exact Match Score	Quasi Exact Match Score	Precision Over Words	Recall Over Words	BERTScore
How does the AWS DeepRacer Student League contribute to community participation?	The AWS DeepRacer Student League encourages students to participate in autonomous racing, fostering a community of learners who develop skills in computer vision, machine learning, and robotics. []	The AWS DeepRacer Student League encourages student participation by offering exclusive competitions, learning resources, and mentorship opportunities. It promotes STEM education, provides a []	0.457831	0.0	0.0	0.422222	0.5	0.743755
What role do AWS DeepRacer Community Ambassadors play in fostering engagement?	They help promote the platform, provide support, and share expertise with the community.	AWS DeepRacer Community Ambassadors are experienced members who volunteer to support and mentor others. They organize local events, provide guidance, and share their expertise with the []	0.32	0.0	0.0	0.727273	0.205128	0.733838

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What is the purpose of the AWS DeepRacer Garage?	in relation to training autonomous racing cars? The AWS DeepRacer Garage is a centralized repository for DeepRacer car data, serving as a hub for data management and collaboration among teams. []	The AWS DeepRacer Garage is a community- driven repository of resources, tips, and best practices for DeepRacer enthusiasts. It serves as a knowledge hub where participants can share their []	0.321839	0.0	0.0	0.28	0.378378	0.722226

What is the significance of the AWS DeepRacer Community Race Organizer program?	The program aims to foster a community of race organizers, providing them with necessary resources and support to host successful community races. This includes access to AWS DeepRacer cars, []	The AWS DeepRacer Community Race Organizer program empowers enthusiasts to host their own DeepRacer events. It provides resources, guidelines, and support for organizing local races, workshops, []	0.422535	0.0	0.0	0.454545	0.394737	0.712547	
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How can hyperparameter tuning improve AWS DeepRacer model performance?		Hyperparameter tuning in AWS DeepRacer involves adjusting variables like learning rate, batch size, and entropy to optimize model performance. Systematic experimentation with these parameters []	0.0	0.0	0.0	0.0	0.0	0.0
How can transfer learning be applied to improve AWS DeepRacer model performance?		Transfer learning in AWS DeepRacer involves using a pre-trained model as a starting point for a new track or racing condition. This technique can significantly reduce training time and improve []	0.0	0.0	0.0	0.0	0.0	0.0

What strategies can be employed to prevent overfitting in AWS DeepRacer models?	To prevent overfitting in AWS DeepRacer, strategies include using regularization techniques, implementing early stopping, and ensuring diverse training data. Varying track conditions and []	0.0	0.0	0.0	0.0	0.0	0.0
How do team tournaments differ from individual tournaments in AWS DeepRacer?	Team tournaments in AWS DeepRacer allow groups of participants to collaborate and compete together. These events often involve sharing knowledge, dividing tasks, and combining individual []	0.0	0.0	0.0	0.0	0.0	0.0