



AWS DeepRacer 2020 Championships Official Rules

Over 40,000 aspiring developers from across the globe have participated in AWS DeepRacer throughout 2020, vying for a chance to compete in the 2020 finals at re:Invent online, and take home the coveted AWS DeepRacer Championship Cup. Championship finalists will be notified of these rules prior to the commencement of racing on Nov. 10, 2020 via the email associated with the AWS DeepRacer account. These rules will also be published and available on awsdeepracerleague.com prior to Nov. 10, 2020.

How the top 112 Championship finalists are determined

(1x) 2019 League Champion The 2019 AWS DeepRacer League Champion will return to defend her title.

(37x) Summit Online Circuit Time Trial Race Winners The winners of the 37 AWS DeepRacer League Summit Circuit Time Trial races.

(37x) Summit Online Circuit Time Head-to-Head Race Winners The winners of the 37 AWS DeepRacer League Summit Circuit Head-to-Head races.

(8x) Virtual Circuit Time Trial Winners The winners of the eight AWS DeepRacer League Virtual Circuit monthly time trial races in 2020.

(8x) Virtual Circuit Object Avoidance Winners The winners of the eight AWS DeepRacer League Virtual Circuit monthly object avoidance races in 2020.

(8x) Virtual Circuit Head-to-Head Winners The winners of the eight AWS DeepRacer League Virtual Circuit monthly head-to-head races in 2020.

(5x) re:Invent Wildcard Race Winners The 5 top finishers winners of the re:Invent Wildcard race taking place from Nov. 10 – 30, 2020.

(8x) Community Wildcard Race Winners 8 lucky entrants selected from various AWS DeepRacer community races throughout 2020 will receive invites to compete in the Championship warmup.

Championship Racing

The AWS DeepRacer re:Invent Championship Cup will consist of a warmup race, a wildcard race, and three (3) rounds of racing. The races will take place on 3 unique track shapes, all of which will be announced and available for training in the DeepRacer console starting on Nov. 10, 2020.

Championship Warmup Race | Time Trial | Nov. 10 – 30, 2020

Wildcard Race | Time Trial | Nov. 10 – 30, 2020

Round 1: Group Knockout Round | Object Avoidance | Dec. 1 – 3, 2020

Round 2: Bracket of 32 | Head-to-Head | Dec. 4, 2020

Round 3: Grand Prix Final | Multi-car Head-to-Head | Dec. 8, 2020

The Championship Warmup Race

Location: [AWS DeepRacer Console](#)

Race Schedule: 12:01am Nov. 10 – 11:59pm Nov. 30, 2020 (UTC)

Track: American Hills Speedway - Length: 59.35m (195') Width: 131 cm (51.58")

Format: Time Trial Leaderboard

Ranking method: Total time

Race style: Continuous Laps



Number of laps: 3
Resets allowed: Unlimited
Reset penalty: 5 seconds

During the Championship warmup race, 107 championship finalists (all except for the 5 re:Invent wildcard race winners) will receive exclusive access to the Championship Cup warmup race, accessed directly in the AWS DeepRacer Console. Throughout the race period, Championship finalists may submit unlimited evaluation attempts to achieve the fastest possible time on the leaderboard. Each evaluation consists of 3 continuous laps, with unlimited resets (5 second penalty per reset). The final position of each racer during the warmup race will determine the start order of the round 1: group knockout races, with the fastest finishers on the leaderboard racing last in their group, and the slowest finishers racing first in the group rounds. All racers must submit to the Championship warmup race to qualify for the Group Knockouts. If a racer fails to submit to the Championship warmup race leaderboard during the racing period, they will forfeit their position in the round 1: Group knockout races. Championship finalists will be notified via email of the conditions of participation for the championship warmup race, and reminded within 10 days of race close via email.

The re:Invent Wildcard Race

Location: [AWS DeepRacer Console](#)
Race Schedule: 12:01am Nov. 10, 2020 – 11:59pm Nov. 30, 2020 (UTC)
Track: American Hills Speedway - Length: 59.35m (195') Width: 131 cm (51.58")
Format: Time Trial Leaderboard
Ranking method: Total time
Race style: Continuous Laps
Number of laps: 3
Resets allowed: Unlimited
Reset penalty: 5 seconds

During the re:Invent Wildcard Race, anyone eligible to compete in the AWS DeepRacer League (except for the 107 qualified AWS DeepRacer Championship finalists) may compete directly in the AWS DeepRacer Console. Throughout the race period, competitors may submit unlimited evaluation attempts to achieve the fastest possible time on the leaderboard. Each evaluation consists of 3 continuous laps, with unlimited resets (5 second penalty per reset). At the end of the racing period, the 5 competitors with the fastest leaderboard times will advance to compete in the round 1: group knockout races. Wildcard finishers will race first in their respective knockout round groups. In the event that more than one wildcard racer is in the same group, the slower finisher from the wildcard race will go first.

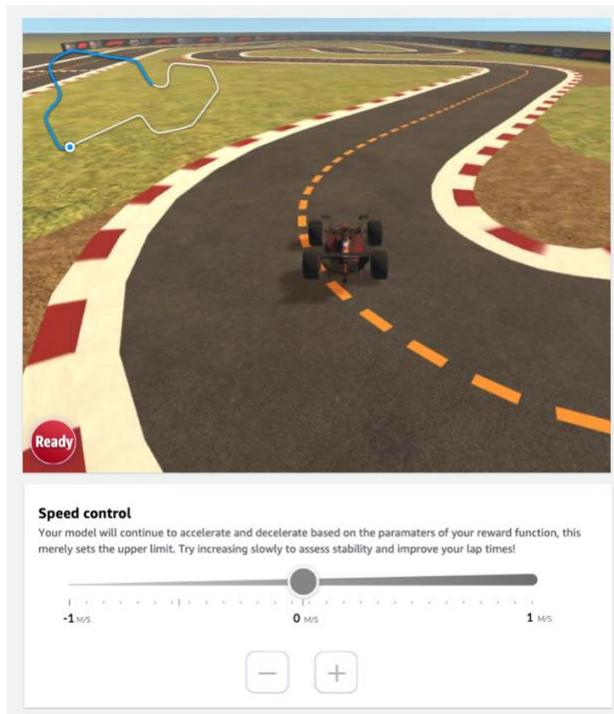
Round 1: Group Knockout Races

Location: [AWS DeepRacer Console](#)
Race Schedule: Dec. 1 – 3, 2020
Track: European Seaside Circuit - Length: 60.27m (197.72') Width: 127.55 cm (50.21")
Format: AWS DeepRacer Virtual Live Racing: Object Avoidance
Ranking method: Fastest lap
Race style: 3 minutes continuous
Resets allowed: Unlimited
Reset penalty: 2 seconds
Collision penalty: 3 seconds



Round 1: Group Knockout Races will take place between Dec. 1 – 3, 2020 inside the AWS DeepRacer console. Participants will be separated into 8 groups based on their geographic regions. Races will be scheduled for each group during regular re:Invent hours for all of the participants, based on the respective geographic region. The scheduled race time for the 8 group races will be published on www.awsdeepracerleague.com by Nov. 15, 2020 as well as emailed directly to championship finalists pending the release of the results of the Virtual Circuit October race results.

The group knockout races will be conducted in a virtual live racing experience within the AWS DeepRacer console. Each group will receive access to their race within the console environment, and shall have the ability to submit the model of their choosing for evaluation in the console prior to the start of their group knockout race. Racers will be placed into a queue based on their Championship Warmup Race results, with top leaderboard finishers racing last in their group. When each racer reaches the front of the queue, they will be given 3 minutes uninterrupted on the virtual track while their model is evaluated live in real time to achieve their single fastest lap time. Each racer will be given 1 attempt on the track. The model will operate autonomously to maneuver through the object avoidance track; however, the racer will have ability to manually set the maximum speed using the speed control tool (pictured below). Once all racers in the group have completed their attempt, the 4 fastest on their group leaderboard will advance to the round 2: Bracket of 32. If a racer for any reason fails to participate in their race run, they will forfeit their turn. No reruns, makeups, or alternate run times will be offered for a racer that is not present during their race turn. During live knockout races, anyone will be able to watch the races live on the official AWS DeepRacer Twitch channel <https://www.twitch.tv/awsdeepracer>. Prior to the start of the group knockouts, practice “office hours” for championship racers will be made available in a follow the sun format. The practice schedule will be released by Nov. 15, 2020 and communicated via email to all championship cup finalists.



To reduce potential latency issues and connectivity disruptions, we strongly recommend participants in the group knockout use a [Mozilla Firefox browser](https://www.mozilla.org/en-US/firefox/) and do not use a Virtual Private Network (VPN) when participating in their race.



Round 2: Bracket of 32

Location: [AWS DeepRacer Console](#)

Race Schedule: Dec. 4, 2020

Track: European Seaside Circuit - Length: 60.27m (197.72') Width: 127.55 cm (50.21")

Format: Head-to-Head single elimination bracket tournament

Ranking method: Total time

Race style: Continuous Laps

Number of laps: 5

Resets allowed: Unlimited

Reset penalty: 5 seconds

Collision penalty: 5 seconds

Following the conclusion of the round 1: group knockouts, the top 4 finishers in each of the 8 groups will be placed into the round 2: Bracket of 32. Matchups for this round will be determined as outlined in the below diagram.





Beginning 12:01am UTC Dec. 1, 2020 all championship competitors have the ability to submit a model of their choosing for the round 2: bracket of 32 for evaluation. Submission for the race will remain open until 11:59pm UTC on Dec. 3, 2020. On Dec. 4, 2020 the 32 racers that qualified for round 2 will have the models they submitted run in an automated tournament evaluation. If a racer qualifies for round 2 and fails to submit a model, the model that was submitted for round 1 racing will be used to as their submission to round 2 races. In each race, 2 models will race Head-to-Head in a 5-lap continuous run format. The first to cross the finish line will advance to the next race until 8 racers remain. The top 8 racers that qualify for the Grand Prix will be notified no later than Dec. 6, 2020 that they have advanced.

Round 3: Grand Prix Final

Location: [AWS DeepRacer Console](#)

Race Schedule: Dec. 8, 2020

Track: Asia Pacific Bay Loop - Length: 60.47 (198.4') Width: 134.7 cm (53")

Format: 8 car Grand Prix

Ranking method: Total time

Race style: Continuous Laps

Number of laps: 5

Resets allowed: Unlimited

Reset penalty: 5 seconds

Collision penalty: 5 seconds

The remaining 8 racers will face off Head-to-Head in an 8 car, 5 lap Grand Prix. Similar to the Bracket of 32 starting on **Dec. 1, 2020, 12:01am UTC**, racers will have the ability to submit the model of their choosing for the Grand Prix race within the AWS DeepRacer console. Submission for the race will remain open until 11:59pm UTC on **Dec. 5, 2020**. If a racer qualifies for round 3: Grand Prix Final and fails to submit a model, the last model that was submitted for the previous rounds will be used to as their submission to round 3.



At the conclusion of the round 2: bracket of 32, the 8 advancing racers will be notified by Dec. 6, 2020 that they have qualified for the final race, and provided with an invitation to a private watch party where all of the Championship finalists will watch the final grand prix “live” on Dec. 8, 2020 via recorded video call. Grid position for the Grand Prix final will be determined by the Championship warmup race leaderboard, with the fastest qualifying time in the number 1 grid spot. In the event a re:Invent Wildcard race participant is in the final 8, their wildcard race time will be compared to the championship race leaderboard to determine their grid position. The first car to successfully complete 5 laps and crosses the finish line will be crowned the 2020 AWS DeepRacer champion. A production of the prerecorded final race watch party will be screened at the start of the Werner keynote on Dec. 15, 2020. The keynote will serve as the world premiere of the Grand Prix Final and official announcement of the 2020 AWS DeepRacer League Champion. Following the final keynote, all race evaluations will become available for review inside the AWS DeepRacer console.

AWS DeepRacer Championship Cup Race Rules

- a. Inside the AWS DeepRacer Console, there may be announcements indicating whether any of the rules were adjusted for a particular race and if so, they will supersede these Terms and Conditions. We reserve the right to update and change these terms and conditions.
- b. You may only race with your own Reinforcement Learning model or a stock AWS DeepRacer Reinforcement Learning model provided by AWS in the AWS DeepRacer console.
- c. All timings shall be as determined by the AWS DeepRacer console to the thousandth of a second.
- d. During the round 1: group knockouts, if the maximum time on track has elapsed and no valid lap has been completed, you will not have a valid lap time to submit and marked as DNF.
- e. During the round 1: group knockouts, once the first lap of an attempt has been initiated, the countdown clock will not be paused or restarted due to any reason.
- f. During the round 1: group knockouts, no special consideration will be given for global latency and response times of the speed control device. AWS will use reasonable best efforts to group Championship finalists from similar regions to minimize discrepancies in latency. The speed control is not a throttle, and only defines the maximum allowable speed of your model, while your model continues to operate autonomously within this parameter.
- g. AWS reserves the right to restrict or otherwise remove you from participation in the Championship Cup due to disruptive behavior or misconduct of any kind, including but not limited to, use of aliases or other racing materials that are inappropriate, profane, defamatory, infringing, or unlawful.
- h. Except where these DeepRacer Championship rules expressly differ, the AWS DeepRacer 2020 League Virtual Circuit rules found here ([2020 AWS DeepRacer League Terms and Conditions](#)) will govern.

The Prizes

Grand Prize: The 2020 AWS DeepRacer Championship Cup Champion shall receive

- a. Bragging rights to the AWS DeepRacer League 2020 Championship Cup and a track and other significant elements named after the winner during AWS DeepRacer League 2021.

The Champion will also have the opportunity to select from ONE of the following prizes.



- a. 10,000 USD AWS Promotional Credit, subject to the AWS Promotional Credit Terms and Conditions, which may be viewed here: <https://aws.amazon.com/awscredits/> AND a chance to win an expenses-paid trip to watch the world of Formula 1 in real life at an F1 Grand Prix of your choosing in the upcoming 2021 season for you and one guest. Prize package includes flights for 2 from the winner's closest international airport to the closest international airport to the F1 Grand Prix of choice, 3 nights' accommodations, 2 Formula 1 Grand Prix Paddock Club passes, and applicable taxes. FMV of this prize package is \$14,500.00 USD excluding taxes. Tax value to be determined upon confirmation of winning participant's country of legal residence. Prize subject to terms and conditions of [2020 AWS DeepRacer League Official Rules](#). If the Grand Prix is cancelled, postponed, or does not allow in person spectators the event portions of the prize will not be fulfilled and Sponsor will have no further obligation to the winner with respect to the event. Prize expires Dec. 31, 2021. All components of prize not redeemed prior to this date shall be forfeited, and no further obligation to the winner will be required.

OR

- b. A Coursera online Machine Learning degree scholarship with a maximum value of up to 20,000 USD. In the event that the Sponsor is unable to deliver the Coursera Machine Learning degree scholarship prize to the winner, for any reason, the winner will receive 20,000 USD AWS Promotional Credit, subject to the AWS Promotional Credit Terms and Conditions, which may be viewed here: <https://aws.amazon.com/awscredits/>.