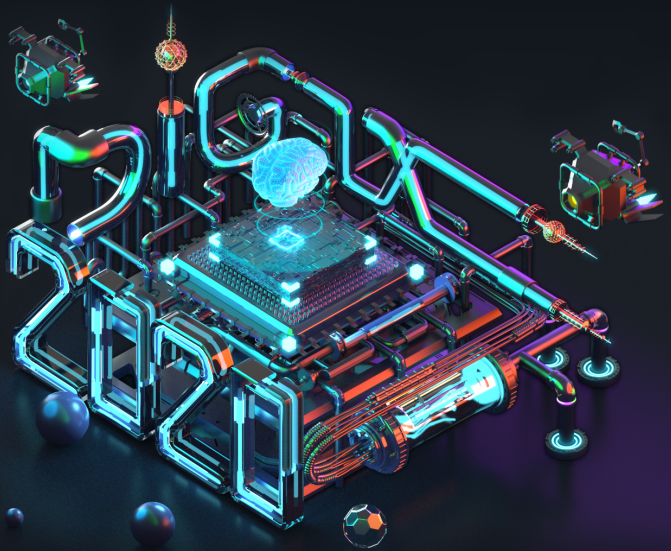




2020 DIGIX GLOBAL AI CHALLENGE

GUIDE
BOOK



Organizers: Jiangsu Association of Artificial Intelligence (JSAI), Huawei Consumer Cloud Service Department, and Huawei Nanjing Research Center.

Co-organizers: Huawei European Research Institute, Russian Research Institute, India Research Center, St. Petersburg Research Center, Turkey Research Center, Finland Research Center, and Amsterdam Research Center.

Introduction

As one of the leading machine learning algorithm contests in China in 2019, DIGIX AI Challenge is coming back in 2020, and expanded to encompass a broader range of global countries and regions relying on excellent experience of the last year.

2020 DIGIX Global AI Challenge strives to provide a world-class competition for university students around the world by bringing together experts, proposals, data, organization, and an environment that are all of top-quality.



I CONTENT

Introduction	01
Contest Overview	03
Contest Proposals	05
Contest Schedule	07
FAQs	11

Contest Overview

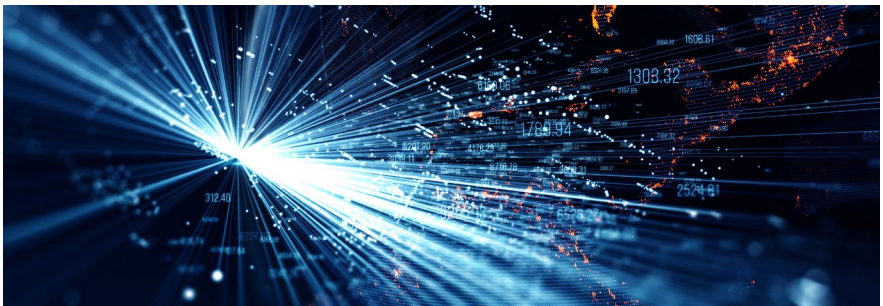
1, About AI CHALLENGE

Huawei will hold the DIGIX Global AI Challenge 2020, offering student algorithm enthusiasts the opportunity to explore uncharted territories, in the wake of groundbreaking advances in AI and smart device technology, to assist in the construction of a fully-connected, ubiquitously-intelligent world.

2, Organization

Organizers: Jiangsu Association of Artificial Intelligence (JSAI), Huawei Consumer Cloud Service Department, and Huawei Nanjing Research Center.

Co-organizers: Huawei European Research Institute, Russian Research Institute, India Research Center, St. Petersburg Research Center, Turkey Research Center, Finland Research Center, and Amsterdam Research Center.







3, Prizes





Total Bonus: US\$158,000

This contest consists of two competition tracks. The awards for each track are set as follows:

Competition track A: Machine learning

			
First prize (x1)	Second prize (x1)	Third prize (x1)	Winning award (x12)
US\$30,000	US\$15,000	US\$10,000	US\$2,000
team	team	team	per team

Competition track B: Computer vision

			
First prize (x1)	Second prize (x1)	Third prize (x1)	Winning award (x12)
US\$30,000	US\$15,000	US\$10,000	US\$2,000
team	team	team	per team

Contest Proposals

There are two Competition Tracks for this contest:

Competition Track A: Machine learning

Proposal 1: Advertising CTR Prediction

Advertising CTR prediction is at the core of any advertising campaign. Increasing the accuracy of predictions is critical to improving the effectiveness of advertising.

To help contestants better and more comprehensively predict user engagement with advertising (that is, click probability), this proposal provides anonymous data with more than 40 fields that encompass the full range of user behavior data (including the resident city, active time by mobile phone, and time at which a behavior occurs), basic ad task attributes (including the creative type, asset display form, and advertiser ID), and basic user information (including the age, gender, and device information) in a real paid ad display. Contestants are required to use algorithms to build CTR prediction models based on the given training data, and submit works based on the given test data set. Area Under Curve (AUC) is adopted to evaluate the works.

This proposal aims to find talented individuals to improve CTR prediction algorithms.

Proposal 2: Search Ranking Prediction

Search ranking is the system for ranking selected documents by the given query-document correlation and displaying the result for users, which is a major challenge for search engines. Increasing the accuracy of rankings is critical to improving the search experience of mobile users.

This proposal provides contestants with training data for building ranking models in a content search scenario, including the correlation label, query ID, document ID, and a total of approximately 100 features across six categories: network graph (including the PageRank indicator), query (including the number of core words and search intention), text matching (including the BM25 score and tightness feature), document (including the content length, title length, and URL length), web classification (including the webpage category, and whether a page is the home page), and time (including the page publishing time). Contestants are required to build ranking models based on the given training data, and submit works based on the given test data set. Expected Reciprocal Rank (ERR) is adopted to evaluate the works.

This proposal aims to find talented individuals to improve search engine ranking algorithms.

Competition Track B: Computer vision

Digital device image retrieval

Accurate image retrieval is a core technology for shopping by picture taking, and also becomes a hotspot in the academia and industry.

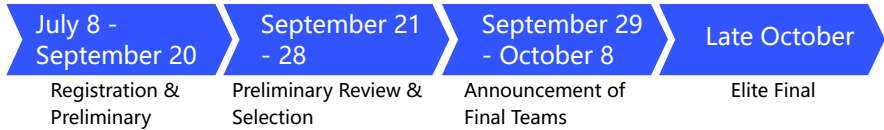
This proposal provides a training dataset, including coarse-grained images of digital devices, such as mobile phones, smart wearables, PCs, tablets, speakers, and routers, as well as fined-grained images (for example, images of mobile phones with different appearance) to complete a digital device image retrieval task in a real snap-to-shop scenario. That is, algorithms can be used to find a digital device image in the gallery and return it based on the given query image of the device. Contestants are required to build and submit models based on the given dataset. The results are then evaluated, according to their top-1 retrieval accuracy rate and mAP@10. This proposal aims to find talented individuals to improve image retrieval algorithms.



About

1, Contest agenda

Schedule:



1. Registration & preliminary (July 8 - September 20)

Sign in to HUAWEI Developers with a valid HUAWEI ID (register for a HUAWEI ID if you do not have one) and click Sign up. If you are a team leader, click New team and enter the team information. If you are a team member, click Join us and enter the name of the team you wish to join. After successfully registering, select a competition track and submit your works by following the online procedures. You will also be able to check your leaderboard ranking in real time.

The contest proposal data will be released officially on **July 20**.

2. Preliminary review & selection (September 21 - 28)

The judging panel will review the submitted works and select 15 teams from each competition track, based on the automatic scoring and qualification review results for the elite final.

3. Announcement of final teams (September 29 - October 8)

The list of finalists will be published on the official website for the contest.

4. Elite final (late October)

All finalists will be invited to a venue designated by Huawei to participate in a closed competition with presentations. The judging panel will select winners in a comprehensive scoring method.

The preceding schedule is subject to change. For details, please pay attention to the notice on the official website of the competition.

2, Qualification

- Full-time undergraduate or graduate students who have been formally enrolled in the following sixteen countries and regions will first register as developers on HUAWEI Developers, before they can sign up for the contest: Russia, Turkey, Chinese mainland, India, Netherlands, Finland, Germany, Austria, Switzerland, United Kingdom, Ireland, France, Spain, Luxembourg, Belgium, and Italy.
- Employees of Huawei and its affiliates, and their immediate relatives, are not eligible to participate in the contest.
- You can participate in the contest on your own, or as part of a team. All members of the team must belong to the same area. For details, please refer to terms and conditions.

Rules for setting up a team:

1. Each contestant can join only one team.
2. Each team must have no more than three contestants (but can have one mentor).
3. Each team has a team leader who is responsible for team management (including reviewing applications from potential team members, or deleting team members) and submitting works.
4. A contestant can apply to join or leave a team.
5. The score for a submission to the contest by a team belongs to the team. If a member leaves the team, the score obtained shall belong to the team, rather than the departing member.

Qualification review rules:

1. The organizing committee is responsible for reviewing the qualification of contestants and teams.
2. Contestants must be full-time undergraduate or graduate students. Mentors must be full-time teachers at educational institutions.
3. If a team member does not meet the necessary requirements during the review, the team is immediately disqualified from participating in the contest or winning an award.

3, Contest agenda

This contest consists of competition tracks A and B. Teams are eligible to participate in both competition tracks, but can only be shortlisted based on the score from a single competition track.

The preliminary and elite final will be conducted as follows:

Preliminary>>>

During the preliminary, teams will be provided with stipulated environments, and expected to submit works based on the given proposals. The official website for the contest will include a real time global leaderboard.

Note: The organizing committee has the right to change the datasets for the contest.

In competition tracks A and B, each team is eligible to submit a maximum of four results per day.

The preliminary is divided into A and B stages, in which two different test datasets will be provided. The final 7 days of the contest belongs to stage B, and everything that occurs before then belongs to stage A. A real-time ranking leaderboard will be provided for the two stages. The highest ranking score for a team at stage B prevails as the final score.

Elite final>>>

During the elite final, all finalists will be invited to the venue designated by Huawei for the closed competition. The onsite requirements shall prevail. The organizing committee will notify finalists by phone call, email, SMS message, internal message, or other designated methods of communication.

In competition track A, only an advertising CTR prediction proposal will be made available. In competition track B, the proposal will be related to digital device image searching, as before.

In competition tracks A and B, each team is eligible to submit a maximum of six results per day. Competition track A will adopt A/B stages, and a real-time ranking leaderboard will be provided for stage A. Stage B will be open on the last day of the contest, with the highest score from among a team' s submissions serving as the displayed score.

Competition track B will include a new real-time ranking leaderboard during stage B of the preliminary, with the highest score from among a team' s submissions serving as the displayed score.

Note: The elite final may take place online. The organizing committee will make a determination, and notify you in a timely manner.

Selection rules >>>

Scoring rules of Competition Track A

1. During the preliminary, each team must complete the two proposals and submit works as required. The total score of each proposal is 100 points. During this phase, the total score is weighted by two proposals: 0.8 for the advertising CTR prediction, and 0.2 for the search ranking prediction. 15 teams will be shortlisted for the elite final, as determined by the automatic scoring and qualification review results. If a team fails to pass the review (for example, due to cheating), all of the teams below it on the leaderboard will automatically move up by one spot.
2. During the elite final, the first prize, second prize, third prize, and honorable mentions will be determined according to the stage B and presentation results.
 - a. Presentation: Each team will be responsible for preparing presentation materials, and making a presentation for the judging panel.
 - b. Selection: The judging panel will comprehensively evaluate works according to the automatic scoring and presentation results , and determine the final ranking and award list.

Scoring rules of Competition Track B

1. During the preliminary, each team must complete the proposal and submit their work, according to the outlined requirements. The score a team obtains is weighted by the following two indicators: 0.5 for the top 1 search accuracy rate and 0.5 for mAP@10. The total size of the model a team submits cannot exceed 500 MB; otherwise, the team cannot obtain any score. 15 teams will be shortlisted for the elite final, as determined by the automatic scoring and qualification review results. If a team fails to pass the review (for example, due to cheating), all of the teams below it on the leaderboard will automatically move up by one spot.
2. During the elite final, the first prize, second prize, third prize, and honorable mentions will be determined according to the stage B and presentation results.
 - a. Presentation: Each team will be responsible for preparing presentation materials, and making a presentation for the judging panel.
 - b. Selection: The judging panel will comprehensively evaluate works according to the automatic scoring and presentation results , and determine the final ranking and award list.

FAQS

1. Can I participate in the contest on my own?

You can participate in the contest on your own or as part of a team, and you can only join one team.

2. Why is the expert review required for the contest?

The expert review ensures that the contest is fair, and that there is no presence of cheating. It also provides contestants with opportunities to engage with experts and industry leaders. In addition, the expert review plays an important role during the final.

3. Can I participate in competition tracks A and B at the same time? If so, can I be shortlisted based on the results of the two competition tracks?

You can participate in the two competition tracks, but only can be shortlisted according to the results from a single competition track.

4. What is the process for participating in the final? Will the organizers pay for my participation expenses?

The final will be held at the venue designated by Huawei. Contestants need to arrive at least one day in advance, and then take part in a closed three-day competition. The organizers will arrange the venue and algorithm development environment. Transportation and accommodation expenses incurred by non-local contestants during this phase will be paid by the organizers.

5. Can I just submit model test samples without source code?

Unfortunately not. Your works must consist of test samples, algorithm implementation instructions, and source code.

6. How can you contact us?

If you have any further questions, please contact us through the Huawei Developer Forum.