

The Competition Track for AI + Pictures has Opened Up: How does Meitu gain “fame and fortune” in the field of artificial intelligence?

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Source: Leiphone, leading Chinese new media platform that covers S&T, founded in 2011, its tenet is to “pay attention to intelligence and the future,” it hosts the Global Artificial Intelligence and Robotics Conference

Original mandarin: <https://www.leiphone.com/news/201809/1OrkB0AmYxGfjSpe.html>

Meitu has been continuing to gain momentum in the field of AI+ pictures in recent years. Not only has its academic strength been recognized by the world's top AI conferences, but it has also turned academic achievements into “combustion accelerators” for products. This has helped its products to top the major application rankings at home and abroad, and promote the exploration of diverse commercialization pathways, and export out more technology-empowered cooperative partnerships.

Since July this year, MeituPic has suddenly launched overseas in a dominant fashion. In just about over a month of time, it has topped the list of App Stores in Korea, Japan, Thailand, Egypt, Saudi Arabia and Mongolia.

The behind-the-scenes driving force of all this is Meitu's robot Andy, which uses artificial intelligence technology to make drawings. This is the world's first product to use artificial intelligence for drawing, which can generate illustrated portraits based on a user's selfie.

And just this summer, Andy launched a new drawing style called "Summer Effects", which is mainly about the cool and sweet summer style. Andy's painting style is fresh and lovely, and his "painting technique" has even been recognized by professional cartoonists. The Japanese

cartoonist Jun Ishikawa took a photo to praise MeituPic, and people commented “kawaii” in the comment section.

With the support of artificial intelligence, MeituPic has attracted countless fans in various overseas countries, and its ranking in the application markets has continued to soar.

The excellent results of the products can not be underestimated, and behind this is the momentum of Meitu in the academic field. In the past 8 months of 2018, Meitu has 8 AI research achievements recognized by the world's top academic conferences (see the end of the article). These academic achievements have correspondingly added points to Meitu's "AI Impact Factor," a product of Leiphone's academic channel AI Science and Technology Review Database product.

Behind these achievements is Meitu's extensive research and development resources devoted to artificial intelligence (especially in the field of computer vision). While exploring the cutting-edge artificial intelligence technology, the company also uses academic results to promote product innovation and development, and explores diverse commercialization pathways for the company.

Meitu's AI gets "both fame and fortune"

The innovation and breakthrough in AI skin measurement is an excellent example of how artificial intelligence allows Meitu to get “both fame and fortune”.

In August of this year, Meitu Imaging Lab (MTlab) won the skin cancer lesion boundary segmentation Task #1 in the ISIC Challenge 2018 competition, fully demonstrating Meitu's technical strength in AI skin measurement. It should be noted that competitors in the same topic included Tencent Youtu, Lenovo Research Institute, National University of Singapore, Weill Cornell Medical College, Nanyang Technological University and other well-known research institutes and enterprises.



In reality, Meitu has been working on AI skin measurement technology since 2017, and with this technology as the core, launched the e-commerce platform "Meitu Meipu" App. Users only need to take a plain-face selfie with a camera, and the platform can generate a unique skin quality report, give targeted skin care advice, and recommend appropriate skin care products, and then purchase the order on the platform.

This unique skin-care experience of "test-recommend-purchase" is the key to Meitu's Meipu standing out in the highly competitive e-commerce space. According to the latest earnings report of Meitu in August, the proportion of revenue contributed by Meitu Meipu has increased, and the user conversion rate is quite high.

As early as the end of last year, Mito's AI skin measurement technology had achieved 95% accuracy in five areas of skin age, skin color, blackheads, dark circles, and acne. It can identify the type of skin problem: acne marks, chloasma, or melanin.

In order to participate in this ISIC Challenge 2018 competition, MTLAB has made bold improvements and integrations in the classic segmentation detection network as part of its accumulation of AI skin measurement technology. In a little more than two months, Mito's artificial intelligence team solved the problems of complex lesions, numerous human parts, and different expert reference labels. Only data consisting of 2,500 images were used to train these superior models.

Firstly, Meitu detects the approximate area of the lesion, and sends the test result to the segmentation network to obtain the fine segmentation contour. The design of the segmentation network fully considers the fusion of the details of the lesion and the abstract semantic features, so that it can be better combine local and global information about the image. In the end, its score of 80.2% segmentation accuracy (the only team with accuracy of more than 80%) placed first among more than 80 teams.

Meitu also said that this winning technology will also be used in the recommendation of a more comprehensive diagnosis and repair product for skin problems.

A similar case is the image enhancement technology of Meitu. In the ECCV 2018 Perceptual Image Enhancement on Smartphones (Track B), Meitu won again. And the algorithm submitted by Meitu Imaging Lab (MTlab) was essentially first in every indicator, such as subjective quality, objective quality, calculation speed, memory occupancy; additionally, its comprehensive score was significantly ahead of other participating teams.

The original intention of the development of image enhancement technology is to enable the mobile phone to take photos close to the DSLR quality. Meitu's mobile phone can take advantage of its "small and beautiful" dimensions to carve out a position in the fierce smartphone market, and its self-developed image enhancement technology has undoubtedly contributed. The excellent camera effects and experience of Meitu's mobile phone has successfully helped the company realize its cash conversion and contributed to the stable cash flow at this stage.

From empowering yourself to empowering partners

Previously, the impression Meitu gave others was more of a product-based company than a technology-based company. In fact, Meitu has accumulated leading image technology in the past 10 years and has been working on artificial intelligence since 2010.

In the financial report of Meitu in March this year, the outside world can intuitively see how artificial intelligence technology adds points to the various businesses of Meitu, such as how the company has integrated artificial intelligence technology into new application functions. Including MeituPic's drawing robot Andy as well as the hundreds of changing backgrounds through Meipai, these features have been used by users more than 1 billion times.

In addition, Meitu's video recognition technology also uses artificial intelligence to help the platform understand the background of the video uploaded to Meipai. This constitutes important input data for the recommendation algorithm that enhances user activity. According to the March earnings report, in the second half of 2017, the improvement of the recommendation algorithm made each user's interaction (such as commenting and liking featured videos) increase by 50% compared with the first half of 2017.

As for the smartphone segment, Meitu has adopted artificial intelligence and 3D reconstruction technology to enable users to take photos with professional studio-level lighting effects. The company believes that adopting top-notch technology will continue to differentiate Mito smartphones from the competition by capturing higher quality, personalized, and 100% creative photos.

In addition to 10 years of imaging technology experience and hundreds of millions of user bases, the integration of technology and art is a major advantage of Mito in the field of artificial intelligence.

From 2018 onwards, Meitu's technology began to export to the B side (business-to-business), empowering partners. In the second half of this year, Meitu invested in the GengMei app, a consumer medical platform, and used its artificial intelligence technology to empower Gengmei and help it establish a medical aesthetic intelligence engine. In addition, the AI virtual makeup product "Meitu Magic Mirror" has become the first choice for international beauty brands, and provides virtual makeup services for DFS and Dolce & Gabbana Beauty (DG Beauty)'s offline stores.

In its earnings report in March this year, Meitu stressed that "we will continue to invest in artificial intelligence to further enhance our user activity and commercialization potential," believing that it will also use more artificial intelligence research and development results in the future, and gain traction with business collaborations and technical applications.

Appendix:

In the first 8 months of 2018, Mito has 8 research results of artificial intelligence recognized by the world's top academic conferences.

1. Meitu won the division task of ISIC 2018 skin cancer lesions

Link: <https://challenge2018.isic-archive.com/leaderboards/>

2. Meitu won the ECCV 2018 Perceptual Image Enhancement on Smartphones (Track B)

Link: <http://ai-benchmark.com/challenge.html>

3. Hierarchical Nonlinear Orthogonal Adaptive-Subspace Self-Organizing Map based Feature Extraction for Human Action Recognition (AAAI), 2018, Oral

Link: <https://www.leiphone.com/news/201803/4P5vQiW1tRvVbBNA.html>

4. Interaction-aware Spatio-temporal Pyramid Attention Networks for Action Classification, (ECCV), 2018

Link: <https://www.leiphone.com/news/201807/uSouSPIZzGQ7vp6O.html>

5. RGCNN: Regularized Graph CNN for Point Cloud Segmentation, (ACM Multimedia), 2018

Link: <https://arxiv.org/abs/1806.0295>

6. Human Conversation Analysis Using Attentive Multimodal Networks with Hierarchical Encoder-Decoder (ACM Multimedia), 2018, Oral

7. Joint Denoising/Compression of Image Contours via Shape Prior and Context Tree, (IEEE Transactions on Image Processing), 2018

Link: <https://ieeexplore.ieee.org/document/8318677/>

8. Reversible Data Hiding with Automatic Brightness Preserving Contrast Enhancement, (IEEE Transactions on Circuits and Systems for Video Technology), 2018

Link: <https://ieeexplore.ieee.org/document/8463590/>