



Company Overview

WE ARE **MALONG TECHNOLOGIES**



- Award-winning computer vision startup, backed by Softbank China (Series B-Round).
- Breakthrough in-house AI research resulting in state-of-the-art visual product recognition.
- Tech powers high performance cashier-less retail and image recognition e-commerce scenarios.
- Established in 2014, now with 100+ team from Microsoft Research, Oxford VGG, and other top orgs.
- Company vision is to help traditional industries transform with AI to achieve higher efficiency.



About Us



CEO
Dinglong Huang



CTO
Matt Scott
Microsoft Research



Chief Scientist
Weilin Huang
UNIVERSITY OF OXFORD

Dr. Dinglong Huang worked at Google, Microsoft, Tencent, and most recently, the Vice President of Products at TripAdvisor China. He obtained his doctorate from Tsinghua University. He met co-founder, Matt Scott, at Microsoft where at the time, they worked together on the successful Microsoft Research "Engkoo" project. Dinglong is an adjunct master instructor of the Computer Science Department in Tsinghua University and a life mentor of the Industrial Engineering Department. In 2017, Dinglong won a Provincial Award for his contribution to the AI industry in China.

Matt Scott is co-founder and CTO of Malong Technologies. He has 15+ years R&D experience in computer vision and machine learning. Matt is a Senior Member of the IEEE (SMIEEE), has published 50+ patents, and a dozen research papers in scientific conferences and journals. Prior to Malong, he was at Microsoft for 10 years, working as a senior development lead in the Innovation Engineering Group of Microsoft Research on computer vision and machine learning. In 2017, Matt won the national "Top 20 International Entrepreneurs" award in China.

Dr. Weilin Huang is a world-class research scientist in computer vision and deep learning. He was a postdoctoral scholar in the Visual Geometry Group (VGG) of the University of Oxford. Published the world's top performance on numerous vision recognition benchmarks: MIT Place205, MIT Indoor67, SUN397, ICDAR (2011, 2013, 2015), ImageNet 2015 Challenge 2nd place (Scene Classification), WebVision 2017 Challenge 1st place (General Classification). PC member for the premier computer vision journals and conferences: TPAMI, CVPR, ICCV and ECCV. Assistant Professor of the Chinese Academy of Sciences.

Core Research Technology Advantage

WEAKLY SUPERVISED VISUAL REPRESENTATION LEARNING

Problem: The dependency on high-quality, balanced human annotated data. This creates a barrier by reducing the ability for the machine to train from the massive and noisy data on the web, such as the billions of products online for sale every day.

Solution: Unlike costly supervised approaches, Malong developed a novel yet practical “weakly-supervised” deep learning algorithm to take advantage of the abundant but noisy online product data (images and metadata).

Impact: Malong’s state-of-the-art weakly supervised approach has been applied broadly within ProductAI® to enable its models to significantly boost performance via a general visual understanding of products. Malong can learn from vastly more data than others.

Evidence: Malong bested over 100 AI orgs, including billion-dollar companies and top universities, winning the WebVision 2017 Challenge from Google at CVPR, a successor to the famous ImageNet Challenge. Award handed by Dr. Fei-Fei Li, creator of ImageNet.



Challenge Results

WebVision Image Classification Task

Rank	Team name	Run1	Run2	Run3
1	Malong AI Research	0.9358	0.9467	0.9478
2	SHTU_SIST	0.9223	0.9225	0.9218
3	HG-AI	0.9189	0.9152	0.9152
4	VISTA	0.8979	0.9005	0.8980
5	LZ_NES	0.8853	0.8758	0.8723
6	CRCV	0.8707	0.8717	0.8701
7	Chahrazad	0.8705	0.8705	0.8705
8	Gombru (CVC and Eurecat)	0.8475	0.8374	0.8586

ProductAI® : Full-Stack Visual Product Recognition Technology



MULTI-LEVEL VISION

We live in a world of products. In retail, manufacturing, and security scenarios, products need to be reliably recognized at a high-level, microscopic-level, and even the invisible (x-ray) level. If a machine can “see” products as well as people can, higher efficiency can be achieved in retail product checkouts, higher quality in manufacturing product testing, and higher safety via baggage scanning of products – just to name a few scenarios. Using breakthrough weakly-supervised deep learning algorithms, scientists at Malong invented product recognition technology which operates with high performance across the full-stack of visual input levels – the big, the small, and the invisible -- to help improve efficiency, quality, and safety.

ProductAI® : Offerings for Retail



Online: Product Recognition Cloud APIs

To improve websites and apps, we offer fast, accurate and scalable cloud APIs to enable shopping from a photo or phone camera. Additionally, APIs can be used for recommendation, tagging, and reducing cart abandonment via similar item suggestion.

In-Store: Product Recognition & Cashier-less Solutions

We offer in-store product recognition systems, for example, visually identify products in a customers cart. Helps enable unmanned shopping, reduce shrinkage and useful for data collection. We can also partner to build custom, large-store scale unmanned cashier-less shopping.

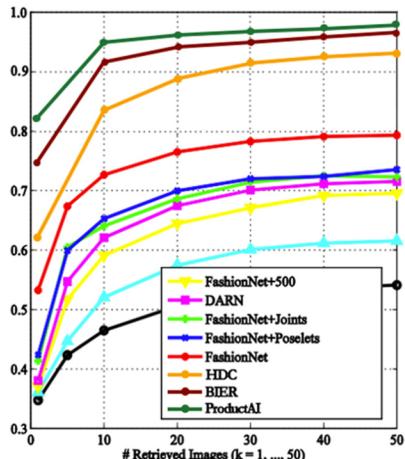
Portable Stores: Smart Shopping Cabinets

We offer vision-based smart shopping cabinets (unmanned mini-stores). One can open a cabinet, easily take items at will, and be charged automatically upon door close. These units could be placed in businesses, institutions, apartments, etc. Easy to stock, monitor, and operate.

● Benchmarks: Performance in Visual Product Retrieval

PERFORMANCE EXAMPLE

IN-SHOP CLOTHES RETRIEVAL BENCHMARK



7.9 Points Higher Than Best Reported (as of ICCV17)

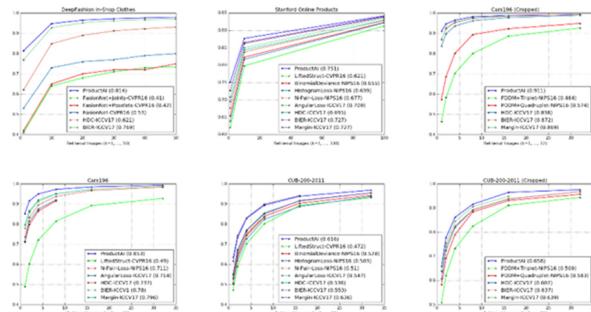
ProductAI:
recall@1 : 84.8
recall@10: 95.5

BIER [1]:
recall@1 : 76.9
recall@10: 92.8

HDC [2]:
recall@1 : 62.1
recall@10: 84.9

FashionNet [3]:
recall@1 : 52.3
recall@10: 72.8

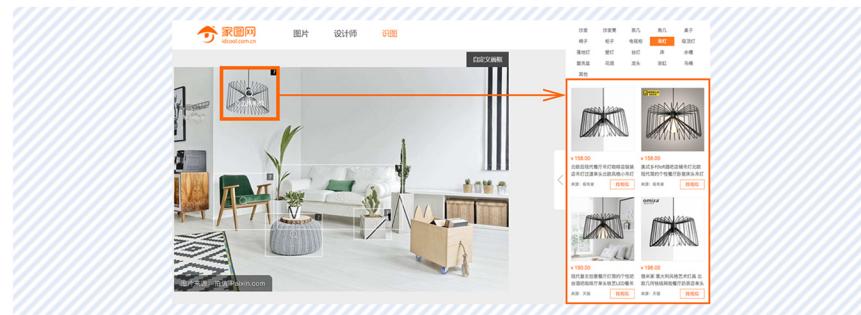
Malong's ProductAI consistently tops the ranking in performance on related major image retrieval scientific benchmarks, such as Stanford Online Products, DeepFashion, CUB-200-2011, and CARS196, and more:



Sources:

- [1] M Opitz, et al. BIER-Boosting Independent Embeddings Robustly. In ICCV, 2017.
- [2] Yuhui Yuan, et al. Hard-Aware Deeply Cascaded Embedding. In ICCV, 2017.
- [3] Ziwei Liu, et al. DeepFashion: Powering Robust Clothes Recognition and Retrieval with Rich Annotations. In CVPR, 2016.

● ProductAI® Cloud Example: Furniture Visual Search API



● ProductAI® Hardware Example: Retail Goods Recognition



● ProductAI® Analytics Example: Fashion Color Trend Analysis

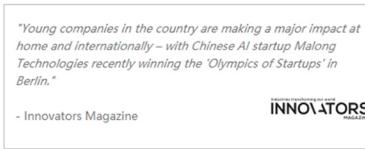
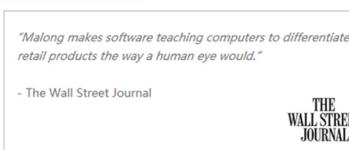


Press, Quotes, and Awards

PRESS & QUOTES



In 2017 Accenture Research Report ("Boost Your AIQ"), Malong Technologies is a Highlighted AI Provider



AWARDS

- 2017 - Google CVPR WebVision, First Prize
- 2017 - Fast Company Most Innovative China 50
- 2017 - Microsoft Accelerator Outstanding Alumni
- 2017 - Deloitte Shenzhen Technology Fast 20

- 2016 - Microsoft "AI Pioneer" Award Winner
- 2016 - Microsoft Hackathon China, First Prize
- 2016 - Amazon Hackathon China, First Prize
- 2016 - NVIDIA AI Demo Winner

Investors and Accelerators/Partners

Investors - Note: Latest Round (Series B) Led by Softbank China (SBCVC). Since 2014, invested by 8 VCs, raising over \$40M+ USD.



Softbank China (SBCVC) is a leading VC firm with a portfolio that includes Alibaba

Accelerated By / Partners -



Locations

- SHENZHEN, CHINA (HQ)
- BEIJING, CHINA
- SHANGHAI, CHINA
- TOKYO, JAPAN

Free Trial: productai.com/trial
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For more information, please visit www.malong.com