ZHANG KAIPENG
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Ph.D. Student & JSPS Research Fellow (日本学术振兴会特别研究员)
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📍 Tokyo, Japan

Research Interest

- Face analysis
- Few-shot learning
- Dynamic network architecture
- Incremental active learning

Selected Honors

- World's TOP 2% Scientists
- 6500+ Google Scholar Citations
- 4000+ Github Stars
- MSRA fellowship nomination
- JSPS Research Fellowship
- 1st Place, DFW Challenge, CVPR
- 1st Place, LAP Challenge, CVPR
- 1st Place, EmotiW Challenge, ICMI

About Me

I am a final-year Ph.D. student at The University of Tokyo. My research interest mainly lies in computer vision and deep learning, and focuses on **face analysis, dynamic network architecture, incremental active learning, and few-shot learning.**

I did high-impact works that received over **6000 citations** and **4000 GitHub Stars**. Besides, I won some **competitions** in top conferences. I also was awarded **JSPS Research Fellowship**, the top Ph.D. fellowship in Japan.

I also have industrial experience in developing AI-related products. I was a researcher in SenseTime and a technical consultant in ULSee. I also did research internships at MSRA, Tencent, and MMLAB of SIAT.

"Think like an amateur, do as an expert."　　　*-by Takeo Kanade (金出武雄)*

Education

2019.04-2022.03 (expected)　　　**The University of Tokyo**　　　**Ph.D.**
Graduate School of Information Science and Technology
supervised by Prof. Yoichi Sato

2016.09-2018.08　　　**National Taiwan University**　　　**M.S.**
Graduate Institute of Networking and Multimedia
supervised by Prof. Winston Hsu.

2012.09-2016.07　　　**Donghua University**　　　**B.E.**
Computer Networking

Experience

2019.04-Present　　　**The University of Tokyo**
Topic: Semantic segmentation, few-shot learning, active learning, incremental learning, and dynamic network architecture
Ph.D. Student & JSPS Fellowship Researcher (日本学术振兴会特别研究员)
Advisor: Prof. Yoichi Sato

- PI: Incremental active learning for semantic segmentation (JSPS Project)
- Few-shot semantic segmentation by dynamic discriminative prototypes
- Incremental learning for person Re-ID.
- Mixture of Experts (MoE) -based CNN. NeurIPS 2021
- Context aggregation and feature super-resolution modules for real-time semantic segmentation. ICRA 2020

2020.09-2021.03　　　**Tencent**
Research intern in AI Lab & TEG AI Advertisement Center

- Mixture of Experts (MoE) -based CNN. NeurIPS 2021
- AI in advertisement (focus on advertisement content analysis)

2018.09-2019.03   **SenseTime**

Topic: Face recognition and incremental active learning

Researcher

- Build an incremental city-level face recognition learning and recognition system for ShenZhen Security Bureau.

2018.01-2018.07   **Microsoft Research Asia**

Topic: Face recognition

Research intern

- Large-scale face recognition for NIST FRVT

2016.09-2018.08   **National Taiwan University**

Topic: Face recognition, super-resolution, and emotion recognition

Master student & Research assistant (supported by MediaTek)

Advisor: Prof. Winston Hsu

- Ultra-low resolution face images super-resolution via super-identity loss (ECCV 2018) and facial attributes assistance (CVPRW 2018).
- Disguised face recognition in the wild.
  1st Place of Disguised Faces in the Wild Challenge, CVPR 2018.
- Group-level emotion recognition in the wild.
  1st Place of EmotionW 2017, 2nd Place of EmotionW 2018 and 2019
- Engagement Prediction
  3rd Place of EmotionW 2019
- Virtual try-on shoe. ACCV 2018

2016.10-2018.03   **ULSee Technology**

Topic: Face detection, alignment, recognition, and attribute classification

Technical consultant

- Consultants in developing algorithms for face analysis products.

2017.07-2017.09   **Tencent**

Topic: Face detection and alignment

Research intern in AI Lab

- Inside-cascaded CNN for real-time face detection. ICCV 2017
- MTCNN (Pro) for real-time face detection and alignment.

2015.08-2016.08   **MMLab of SIAT**

Topic: Face detection, alignment, recognition, and attribute classification

Visiting student

- Center loss for discriminative feature learning. ECCV 2016 & IJCV
  High academic and industrial impacts
  The most cited face recognition paper published in recent five years.
  The 21st most cited paper in the history of ECCV (1990-2021)
- A multi-task cascaded CNN for face detection (a.k.a MTCNN). IEEE SPL
  High academic and industrial impacts
  The most cited face detection paper published in recent ten years.
  The 2nd most cited paper in the history of IEEE SPL (1994-2021)
- Coarse-to-fine training for CNN-based facial attributes recognition
  1st Place ChaLearn Looking at People Challenge, CVPR 2016.

🏛 Publication (received 6500 citations)

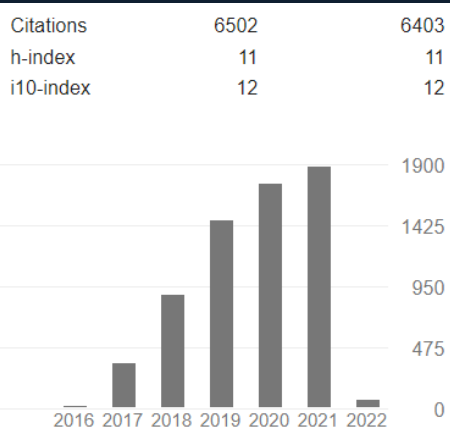**Regular paper (* indicates equal contribution)**

- As the first author. About active learning for segmentation. Under review.
- As the first author. About few-shot segmentation. Under review.
- As a co-author. About incremental learning for person Re-ID. Under review.
- As a co-author. About masked face recognition. Under review.
- Kaipeng Zhang, Zhenqiang Li, Zhifeng Li, Wei Liu and Yoichi Sato. Neural Routing by Memory. NeurIPS 2021
- Zhanpeng Zhang, Kaipeng Zhang. FarSee-Net: Real-Time Semantic Segmentation by Efficient Multi-scale Context Aggregation and Feature Space Super-resolution. ICRA 2020.
- Yandong Wen*, Kaipeng Zhang*, Zhifeng Li and Yu Qiao. A Comprehensive Study on Center Loss for Deep Face Recognition., IJCV 2019.
- Kaipeng Zhang, Zhanpeng Zhang, Chia-Wen Cheng, Winston Hsu, Yu Qiao, Wei Liu and Tong Zhang. Super-Identity Convolutional Neural Network for Face Hallucination. ECCV 2018.
- Chao-Te Chou, Cheng-Han Lee, Kaipeng Zhang, Hu Cheng Lee and Winston Hsu. Pose Invariant Virtual Try-On Shoe with Conditional Image Completion. ACCV 2018.
- Cheng-Han Lee, Kaipeng Zhang, Hu Cheng Lee, Chia-Wen Cheng and Winston Hsu. Attribute Augmented Convolutional Neural Network for Face Hallucination. CVPRW 2018.
- Kaipeng Zhang,Zhanpeng Zhang,Hao Wang, Zhifeng Li, Yu Qiao and Wei Liu.Detecting Faces Using Inside Cascaded Contextual CNN. ICCV 2017.
- Yandong Wen, Kaipeng Zhang, Zhifeng Li and Yu Qiao. A Discriminative Deep Feature Learning Approach for Face Recognition. ECCV 2016.
- Kaipeng Zhang, Zhanpeng Zhang, Zhifeng Li and Yu Qiao. Joint Face Detection and Alignment using Multi-task Cascaded Convolutional Networks. IEEE SPL 2016.

Competition papers

- Guo, Da, Kai Wang, Jianfei Yang, Kaipeng Zhang, Xiaojiang Peng, and Yu Qiao. Exploring Regularizations with Face, Body and Image Cues for Group Cohesion Prediction. ICMI 2019.
- Wang, Kai, Jianfei Yang, Da Guo, Kaipeng Zhang, Xiaojiang Peng, and Yu Qiao. Bootstrap model ensemble and rank loss for engagement intensity regression. ICMI 2019.
- Kaipeng Zhang, Ya-Liang Chang and Winston Hsu. Deep Disguised Faces Recognition. CVPRW 2018
- Kai Wang, Xiaoxing Zeng, Jianfei Yang, Debin Meng, Kaipeng Zhang, Xiaojiang Peng and Yu Qiao. Cascade Attention Networks for Group Emotion Recognition with Face, Body and Image Cues. ICMI 2018.
- Lianzhi Tan, Kaipeng Zhang, Kai Wang, Xiaoxing Zeng, Xiaojiang Peng and Yu Qiao. Group Emotion Recognition with Individual Facial Emotion CNNs and Global Image Based CNNs. ICMI 2017.
- Kaipeng Zhang, Lianzhi Tan, Zhifeng Li, Yu Qiao. Gender and Smile Classification using Deep Convolutional Neural Networks. CVPRW 2016.

Interest

Traveling

Reading

Vlog

Tabletop game

Ping-pong

ACG

Cooking

Honors & Awards

Competitions

As the main contributor

Disguised Faces in the Wild, CVPR	1st Place 2018

(Awarded by IARP within ODNI 美国国家情报总监办公室)

Group Emotion Recognition, EmotiW, ICMI Grand Challenge	1st Place 2017
Accessories Classification, ChaLearn LAP, CVPR	1st Place 2016
Smile and Gender Classification, ChaLearn LAP, CVPR	1st Place 2016

As a co-contributor

Group Cohesion Prediction, EmotiW, ICMI Grand Challenge,	2nd Place 2019
Engagement Prediction, EmotiW, ICMI Grand Challenge,	3rd Place 2019
Group Emotion Recognition, EmotiW, ICMI Grand Challenge,	2nd Place 2018

Others

World's TOP 2% Scientists (published by Stanford University)	2020 & 2021
JSPS Research Fellowship for Young Scientists	2020
Collaborative Research Program, UTokyo	2019
Scholarships from Foundation's Support Fund, UTokyo	2019
MSRA Fellowship Nomination Award	2019
Outstanding Undergraduate Thesis, Donghua University	2016

Academic Service

- Senior program committee member
  IJCAI
- Program committee member/Reviewer
  ECCV, ICCV, CVPR, NeurIPS, ICML, ICLR, AAAI, IJCAI, BMVC, ACCV, ICME, and WACV
- Reviewer
  TPAMI, TIP, TIFS, TNNLS, TCSVT, TMM, Neurocomputing, SPL, and PR