Jianyang Gu

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EDUCATION

Zhejiang University   Hangzhou, China
B.Eng. in Control Science and Engineering   *Sep. 2015 – Jun. 2019*
- Courses: Automation Control, OOP, Robotic Design, Computer Vision

Zhejiang University   Hangzhou, China
Ph.D. in Control Science and Engineering   *Sep. 2019 – Exp. Jun. 2024*
- Research Interests: Object Re-Identification, Dataset Distillation, Unsupervised Domain Adaptation
- Supervised by Prof. Wei Jiang

National University of Singapore   Singapore
Visiting Scholar in School of Computing   *Sep. 2022 – Exp. Oct. 2023*
- Supervised by Prof. Yang You

PROJECTS

Dataset Distillation Schemes   Aug. 2022 –
- Reduce storage and computational data burden by synthesizing small surrogate datasets.
- Improve the training efficiency of gradient matching by selecting proper matching targets.
- Propose to distill the datasets into generative models for better diversity and generalization.

Continual Unsupervised Domain Adaptive Re-ID (In submission)   Mar. 2023 – Jul. 2023
- Reduce the catastrophic forgetting in the continual Re-ID scenarios.
- Incorporate a prompter model to recover the color distribution of previous tasks.
- Improve the adaptation performance, anti-forgetting effects and generalization without storing data.

Neural Architecture Search for Object Re-ID   Nov. 2021 – Mar. 2022
- Design a training-validation decoupled searching scheme for Re-ID tasks.
- Search for rational interactions between multi-scale features which are essential for Re-ID.
- Propose a light-weighted network with higher train-from-scratch performance than pre-trained ResNet-50.

Unsupervised Domain Adaptive Re-ID   May. 2020 – Mar. 2021
- Integrate information from multiple views to promote the quality at separate clustering steps.
- Maintain the historical consistency between adjacent clustering results.
- First place solution to the Visual Domain Adaptation Challenge 2020.
- Focus on solving the inter-domain and intra-domain biases for UDA Re-ID.

Angular Triplet Loss for Vehicle Re-ID   Jul. 2019 – Oct. 2019
- Uniform the metric space for triplet loss and cross entropy loss.
- Design an effective baseline with only global feature employed.

WORK EXPERIENCE

OPPO Research Intern   Nov. 2021 – Jun. 2022
- Focused on the generalizable person re-identification structure.

Alibaba Research Intern   Jun. 2020 – Apr. 2021
- Focused on the unsupervised domain adaptive person re-identification.

Yitu Tech. CI Intern   May. 2018 – Aug. 2018
- Participated in building up the automated test pipeline for products.

Adademic Service

Conference Reviewer
- CVPR, ICCV, ECCV

Journal Reviewer
- IEEE TIV

Awards & Honors

- **Third Place, ActivityNet Temporal Action Localization Challenge in CVPR Workshop** 2022
- **Third Place, SoccerNet Challenge 2022 Action Spotting in CVPR Workshop** 2022
- **First Place, AICity Challenge 2021 Track 2 in CVPR Workshop** 2021
- **Alibaba Annual Outstanding Research Intern** 2020
- **Second Prize, National AI Challenge 2020 Person Re-Identification Track** 2020
- **First Place, Visual Domain Adaptation Challenge 2020 in ECCV Workshop** 2020
- **Annual Merit Graduate Student** 2020
- **First Place, Robocup Montreal** 2018

Publications

(* Equal contribution)

- **J. Gu**, H. Luo, K. Wang, W. Jiang, Y. You, and J. Zhao. Color Prompting for Data-Free Continual Unsupervised Domain Adaptive Person Re-Identification. *Arxiv*, 2308.10716 (2023).

- **J. Gu**, K. Wang, W. Jiang, and Y. You. Summarizing Stream Data for Memory-Restricted Online Continual Learning. *Arxiv*, 2305.16645 (2023).

- Y. Liu*, **J. Gu***, K. Wang, Z. Zhu, W. Jiang, and Y. You. DREAM: Efficient Dataset Distillation by Representative Matching. *ICCV*, (2023).

- D. Zhou*, K. Wang*, **J. Gu***, D. Lian, X. Peng, Y. Zhang, Y. You, and J. Feng. Dataset Quantization. *ICCV*, (2023).

- **J. Gu**, K. Wang, H. Luo, C. Chen, W. Jiang, Y. Fang, S. Zhang, Y. You, and J. Zhao. MSINet: Twins Contrastive Search of Multi-Scale Interaction for Object ReID. *CVPR* (2023).

- K. Wang*, **J. Gu***, D. Zhou, Z. Zhu, W. Jiang, and Y. You. DiM: Distilling Dataset into Generative Model. *Arxiv*, 2303.04707 (2023).

- Z. Qin, K. Wang, Z. Zheng, **J. Gu**, X. Peng, D. Zhou, and Y. You. InfoBatch: Lossless Training Speed Up by Unbiased Dynamic Data Pruning. *Arxiv*, 2303.04947 (2023).

- **J. Gu**, W. Chen, H. Luo, F. Wang, H. Li, W. Jiang, and W. Mao. Multi-view Evolutionary Training for Unsupervised Domain Adpative Re-identification. *IEEE TIFS* 17, 344-356 (2022).

- W. Li*, S. Chen*, **J. Gu***, N. Wang, C. Chen, and Y. Guo. MV-TAL: Mulit-view temporal action localization in naturalistic driving. *CVPRW* 3242-3248 (2022).

- R. Wei, **J. Gu**, S. He, and W. Jiang. Transformer-Based Domain-Specific Representation for Unsupervised Domain Adaptive Vehicle Re-Identification. *IEEE TITS*, 14 (2), 1-21 (2022).

- H. Wu, **J. Gu**, X. Fan, H. Li, L. Xie, and J. Zhao. 3D-Guided Frontal Face Generation for Pose-Invariant Recognition. *ACM TIST*, 14 (2), 1-21 (2022).

- X. Pan, H. Luo, W. Jiang, J. Zhang, **J. Gu**, and P. Li. SFGN: Representing the sequence with one super frame for video person re-identification. *KnoSys*, 249, 108884 (2022).

- H. Xie, H. Luo, **J. Gu**, and W. Jiang. Unsupervised Domain Adaptive Person Re-Identification via Intermediate Domains. *Applied Science*, 12 (14), 6990 (2022).

- X. Pan, H. Luo, W. Chen, F. Wang, H. Li, W. Jiang, J. Zhang, **J. Gu**, and P. Li. Dynamic Gradient Reactivation for Backward Compatible Person Re-identification. *Arxiv*, 2207.05658 (2022).

- S. Chen, W. Li, C. Chen, **J. Gu**, J. Chu, X. Tao, and Y. Guo. SEAL: A Large-scale Video Dataset of Multi-grained Spatio-temporally Action Localization. *ArXiv*, 2204.02688 (2022).

- **J. Gu**, H. Luo, W. Chen, Y. Jiang, Y. Zhang, S. He, F. Wang. H. Li, and W. Jiang. 1st Place Solution to VisDA-2020: Bias Elimination for Domain Adaptive Pedestrian Re-identification. *ArXiv*, 2012.13498 (2021).

- **J. Gu**, W. Jiang, H. Luo, and H. Yu. An efficient global representation constrained by Angular Triplet loss for vehicle re-identification. *Pattern Anal Applic* 24, 367–379 (2021).

- H. Luo, W. Chen, X. Xu, **J. Gu**, Y. Zhang, C. Liu, Y. Jiang, S. He, F. Wang, and H. Li. An Empirical Study of Vehicle Re-Identification on the AI City Challenge. *CVPRW* 4095-4102 (2021).

- H. Luo, W. Jiang, Y. Gu, F. Liu, X. Liao, S. Lai, and **J. Gu**. A strong baseline and batch normalization neck for deep person re-identification. *TMM* 22(10), 2597-2609 (2019).