

Dawei Zhang

DLB 688, Department of Computer Science
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Homepage · GitHub · ResearchGate · GoogleScholar

RESEARCH INTERESTS

I am interested in Machine Learning, Deep Learning, Computer Vision and Pattern Recognition.
My current focuses include:

- Research on Visual Object Tracking and Video Object Segmentation.
- Application of Deep Reinforcement Learning in Computer Vision Tasks.
- Research on Adversarial Robustness and Interpretability in Deep Learning.

EDUCATION

Fudan University Visiting Scholar

Shanghai, China
Mar 2021 – Present

- Advisor: Prof. Jianfeng Feng
- Institute of Science and Technology for Brain-Inspired Intelligence.
- Designing novel algorithms and techniques to build brain-inspired intelligence.

Zhejiang Normal University Ph.D. Candidate

Jinhua, China
Sep 2019 – Present

- Advisor: Prof. Zhonglong Zheng
- Department of Computer Science, College of Mathematics and Computer Science.
- Dissertation: Research on Visual Object Tracking based on Deep Learning
- I take a fifth-year successive postgraduate and doctoral program.
- 9 published papers; 6 papers under review; 4 pending chinese patents.

Zhejiang Normal University Postgraduate Student

Jinhua, China
Sep 2017 – Jun 2019

- Advisor: Prof. Zhonglong Zheng
- Department of Computer Science, College of Mathematics and Computer Science.
- GPA is 3.75, ranking 1st of the grade (totally 17 students).
- 2019.7 directly turned to a Ph.D. student in ZJNU.

Huaiyin Institute of Technology Bachelor Degree

Huaian, China
Sep 2013 – Jun 2017

- Bachelor of Engineering in Computer Science and Technology.
- Dissertation: Design and Implementation of a Dynamic Announcement System for Classroom Resources Supported by Intelligent Terminal Inquiry
- Rank 5/34. With "Outstanding Graduate Award" (58 out of about 420 graduates).

PROJECT EXPERIENCE

Cloudpeng Technology

Jinhua, China
Nov 2020 – Present

- Research Assistant of Cloudpeng Technology.
- Project1: AI behavior recognition monitoring: Face recognition and tracking
- Project2: Research and development of key technologies of intelligent visual settlement system

China Mobile Zhejiang Branch

Jinhua, China
Jun 2018 – Sep 2018

- Research Intern
- Technical support, operation and maintenance
- Excellent personal practice of summer social practice

Chinese Patents

- A Robust Object Tracking Framework based on Hierarchical Decision Network, Pending.
- Light-Weight Multi-Channel Aggregation Network for Image Super-Resolution, Pending.
- Cross Channel Aggregation Similarity Network for Salient Object Detection, Pending.
- Rain to Rain: Learning Real Rain Removal without Ground Truth, Pending.

SKILLS

Programming skills

- Programming language: C/C++, Java, Python, PyTorch, TensorFlow.
- Data analysis: R, Pandas, Matplotlib, MATLAB, Python.
- Database management: SQL Server, MySQL, MariaDB.
- Web development: HTML/CSS, JavaScript, JQuery.
- Miscellaneous: Git/GitHub, SSH, Linux, Shell, Markdown, \LaTeX .

Techniques

- logistic/linear regression, linear discriminant analysis, clustering (k-means, hierarchical cluster analysis), k-nearest neighbor, bagging, random forests, SVM, dimension reduction, deep learning, reinforcement learning, Bayesian statistics, cross validation, neural networks.

Languages: English (CET-4 and CET-6)

PUBLICATIONS

1. **D. Zhang**, Z. Zheng, R. Jia, and M. Li, "Visual tracking via hierarchical deep reinforcement learning," in *Proceedings of the AAAI Conference on Artificial Intelligence (AAAI 2021, CCF-A)*, Virtual Conference, Feb. 2021, pp. 141–158, *Full Paper*.
2. **D. Zhang**, Z. Zheng, M. Li, and R. Liu, "Csart: Channel and spatial attention-guided residual learning for real-time object tracking," *Neurocomputing (SCI-II Top, CCF-C, IF = 4.438)*, vol. 436, pp. 260–272, 2021.
3. **D. Zhang**, Z. Zheng, M. Li, X. He, T. Wang, L. Chen, R. Jia, and F. Lin, "Reinforced similarity learning: Siamese relation networks for robust object tracking," in *Proceedings of the 28th ACM International Conference on Multimedia (MM 2020, CCF-A)*, Seattle, WA, USA, Oct. 2020, pp. 294–303, *Full Paper*.
4. **D. Zhang** and Z. Zheng, "High performance visual tracking with siamese actor-critic network," in *IEEE International Conference on Image Processing (ICIP 2020, CCF-C)*, Abu Dhabi, United Arab Emirates, Sep. 2020, pp. 2116–2120, *Full Paper*.
5. **D. Zhang** and Z. Zheng, "Joint representation learning with deep quadruplet network for real-time visual tracking," in *IEEE International Joint Conference on Neural Networks (IJCNN 2020, CCF-C)*, Glasgow, United Kingdom, Jul. 2020, pp. 1–8, *Full Paper*.
6. **D. Zhang**, Z. Zheng, X. He, L. Su, and L. Chen, "Learning fine-grained similarity matching networks for visual tracking," in *Proceedings of the ACM International Conference on Multimedia Retrieval (ICMR 2020, CCF-B)*, Dublin, Ireland, Jun. 2020, pp. 296–300, *Poster Paper*.
7. Z. Deng, Z. Zheng, D. Deng, T. Wang, Y. He, and **D. Zhang**, "Feature selection for multi-label learning based on f-neighborhood rough sets," *IEEE Access (SCI-II, IF = 3.754)*, vol. 8, pp. 39 678–39 688, 2020.
8. P. Bian, Z. Zheng, M. Li, Y. He, T. Wang, **D. Zhang**, and L. Chen, "Attention fusion network based video super-resolution reconstruction," *Journal of Computer Applications (CSCD)*, 2020.
9. **D. Zhang**, Z. Zheng, T. Wang, and Y. He, "Hrom: Learning high-resolution representation and object-aware masks for visual object tracking," *Sensors (SCI-III, IF = 3.275)*, vol. 20, no. 17, p. 4807, 2020.

UNDER REVIEW

1. **D. Zhang**, Z. Zheng, P. Bian, R. Jia, and M. Li, "DyLA: Dynamic Label Assignment in Siamese Network for Visual Object Tracking", submitted to *International Joint Conference on Artificial Intelligence (IJCAI 2021, CCF-A)*.
2. Z. Zheng, L. Chen, H. Liu, J. Mo, **D. Zhang**, J. Yang, F. Lin, and R. Jia, "Cross Channel Aggregation Similarity Network for Salient Object Detection", submitted to *International Journal of Machine Learning and Cybernetics (SCI-II, IF = 3.753)*.
3. K. Abd Erraouf, Z. Zheng, J. Mo, **D. Zhang**, and L. Chen, "Rain to Rain: Learning Real Rain Removal without Ground Truth", submitted to *IEEE Access (SCI-II, IF = 3.754)*.
4. P. Bian, Z. Zheng, **D. Zhang**, R. Jia, F. Lin, C. Tang, and M. Li, "Light-Weight Multi-Channel Aggregation Network for Image Super-Resolution", submitted to *IEEE International Conference on Multimedia and Expo (ICME 2021, CCF-B)*.
5. P. Bian, Z. Zheng, **D. Zhang**, L. Chen, and M. Li, "Single Image Super-Resolution via Global-Context Attention Network", submitted to *IEEE International Conference on Image Processing (ICIP 2021, CCF-C)*.
6. J. Mo, Z. Zheng, L. Chen, K. Abd Erraouf, **D. Zhang**, and D. Liu, "Global Perception Attention Network for Fine-Grained Visual Classification", submitted to *International Conference on Computer Communication and Artificial Intelligence (CCAI 2021, EI)*.

TALKS	<ol style="list-style-type: none"> 1. Visual Tracking via Hierarchical Deep Reinforcement Learning, <i>AAAI Conference on Artificial Intelligence</i>, Virtual Conference, Feb. 2021. 2. Talking about Visual Target Tracking: From Principle to Application, <i>Cloudpeng Technology</i>, Jinhua, China, Oct. 2020. 3. Reinforced Similarity Learning: Siamese Relation Networks for Robust Object Tracking, <i>ACM International Conference on Multimedia</i>, Seattle, WA, USA, Oct. 2020. 4. High Performance Visual Tracking with Siamese Actor-Critic Network, <i>IEEE International Conference on Image Processing</i>, Abu Dhabi, United Arab Emirates, Oct. 2020. 5. Joint Representation Learning with Deep Quadruplet Network for Real-Time Visual Tracking, <i>IEEE International Joint Conference on Neural Networks</i>, Glasgow, United Kingdom, Jul. 2020. 6. Learning Fine-Grained Similarity Matching Networks for Visual Tracking, <i>ACM International Conference on Multimedia Retrieval</i>, Dublin, Ireland, Jul. 2020.
PROFESSIONAL SERVICE	<ul style="list-style-type: none"> • Reviewer of IEEE Access • Reviewer of IEEE ICIP 2021
AWARDS	<ul style="list-style-type: none"> • Academic Innovation Scholarship of Zhejiang Normal University 2020 • Top-10 learning pacesetters of Zhejiang Normal University 2020 • First class Academic Scholarship of Zhejiang Normal University 2020 • First class Academic Scholarship of Zhejiang Normal University 2019 • "Huawei Cup" Mathematical Modeling Competition, Winner Award 2018 • First class Academic Scholarship of Zhejiang Normal University 2018 • Outstanding Graduate of Huaiyin Institute of Technology 2017 • Outstanding Volunteer in the National Robotics Competition 2016 • Third class Scholarship of Huaiyin Institute of Technology 2015