Deng-Bao WANG

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Education

Southeast University Nanjing, China, 2019.9 - Now

School of Computer Science and Engineering

Ph.D. student in Machine Learning Advisor: Prof. Min-Ling Zhang

- **Youth Student Fundamental Research Project from NSFC (2024)**
- Deutscher Akademischer Austauschdienst (DAAD) AInet Fellow (2023)
- Tencent Rhino-Bird Elite Training Program (2022)
- Excellent Student Award of Southeast University (2022)
- National Scholarship (2022)
- Special Freshman Scholarship (2019)

Southwest University Chongqing, China, 2016.9 - 2019.6

College of Computer and Information Science

M.Sc. in Machine Learning Advisor: Prof. Li Li

Yantai University Yantai, China, 2012.9 - 2016.6

School of Computer and Control Engineering

B.Sc. in Computer Science

Experience

Research Intern @Tencent AI Lab Shenzhen, China, 2022.6 - 2022.12

Working in Machine Learning Center, Mentor: Dr. Peilin Zhao

Subject: Uncertainty calibration of deep models, with applications to drug discovery

- One published CVPR paper and one publicly disclosed national patent
- Selected as one of the annual outstanding students in the Tencent Rhino-Bird Elite Training Program

Research Interests

Uncertainty Calibration Towards calibrating DNNs for better uncertainty estimation.

Weakly Supervised Learning Towards learning from imperfect supervision, e.g., partial label learning, noisy label learning.

Deep Learning Phenomena Towards understanding DNNs with fun experiments.

Publications

[ICML'24] Calibration Bottleneck: Over-compressed Representations are Less Calibratable
D.-B. Wang, M.-L. Zhang
In: Proceedings of the 41st International Conference on Machine Learning, 2024, in press.

[AAAI'24] Distilling Reliable Knowledge for Instance-dependent Partial Label Learning
D.-D. Wu[#], **D.-B. Wang[#]**, M.-L. Zhang
In: Proceedings of the 38th AAAI Conference on Artificial Intelligence, 2024, in press.

[CVPR'23] On the Pitfall of Mixup for Uncertainty Calibration
D.-B. Wang, L. Li, P. Zhao, P.-A. Heng, M.-L. Zhang
In: Proceedings of the 34th IEEE/CVF Conference on Computer Vision and Pattern Recognition, 2023, 7609-7618.

[TPAMI'22] Adaptive Graph Guided Disambiguation for Partial Label Learning
D.-B. Wang, L. Li, M.-L. Zhang
IEEE Transactions on Pattern Analysis and Machine Intelligence, 2022, 44(12): 8796-8811.

[ICML'22] Revisiting Consistency Regularization for Deep Partial Label Learning
D.-D. Wu[#], **D.-B. Wang[#]**, M.-L. Zhang
In: Proceedings of the 39th International Conference on Machine Learning, 2022, 24212-24225.

[NeurIPS'21] Rethinking Calibration of Deep Neural Networks: Don't Be Afraid of Overconfidence
D.-B. Wang, L. Feng, M.-L. Zhang
In: Advances in Neural Information Processing Systems 34, 2021, 11809-11820.

[IJCAI'21] Learning from Complementary Labels via Partial-Output Consistency Regularization
D.-B. Wang, L. Feng, M.-L. Zhang
In: Proceedings of the 30th International Joint Conference on Artificial Intelligence, 2021, 3075-3081.

[AAAI'21] Learning from Noisy Labels with Complementary Loss Functions
D.-B. Wang, Y. Wen, L. Pan, M.-L. Zhang
In: Proceedings of the 35th AAAI Conference on Artificial Intelligence, 2021, 10111-10119.

[KDD'19] Adaptive Graph Guided Disambiguation for Partial Label Learning
D.-B. Wang, L. Li, M.-L. Zhang
In: Proceedings of the 25th ACM SIGKDD Conference on Knowledge Discovery and Data Mining, 2019, 83-91.

[DASFAA'18] Extracting Label Importance Information for Multi-Label Classification
D.-B. Wang, J. Wang, F. Hu, L. Li, X. Zhang
In: Proceedings of the 23rd International Conference on Database Systems for Advanced Applications, 2018, 424-439.

[PAKDD'18] A Locally Adaptive Multi-Label k-Nearest Neighbor Algorithm
D.-B. Wang, J. Wang, F. Hu, L. Li, X. Zhang
In: Proceedings of the 22nd Pacific-Asia Conference on Knowledge Discovery and Data Mining, 2018, 81-93.

[TPAMI] Student Loss: Towards the Probability Assumption in Inaccurate Supervision
S. Zhang, J.-Q. Li, H. Fujita, Y.W. Li, **D.-B. Wang**, T.-T. Zhu, M.-L. Zhang, C.-Y. Liu
IEEE Transactions on Pattern Analysis and Machine Intelligence, in press.

[TKDE] Dimensionality Reduction for Partial Label Learning: A Unified and Adaptive Approach
X.-R. Yu, **D.-B. Wang**, M.-L. Zhang
IEEE Transactions on Knowledge and Data Engineering, in press.

[TKDE] Learning from Noisy Labels via Dynamic Loss Thresholding
H. Yang, Y.-Z. Jin, Z.-Y. Li, **D.-B. Wang**, X. Geng, M.-L. Zhang.
IEEE Transactions on Knowledge and Data Engineering, in press.

[TKDD] Multiple-Instance Learning from Triplet Comparison Bags
S. Shu, **D.-B. Wang**, S. Yuan, H. Wei, J. Jiang, L. Feng, M.-L. Zhang
ACM Transactions on Knowledge Discovery from Data, 2024, 18(4): 1-18.

[AAAI'23] Partial-Label Regression
X. Cheng, **D.-B. Wang**, L. Feng, M.-L. Zhang, B. An.
In: Proceedings of the 37th AAAI Conference on Artificial Intelligence, 2023, 7140-7147.

[MLJ'22] Partial Label Learning with Emerging New Labels
X.-R. Yu, **D.-B. Wang**, M.-L. Zhang
Machine Learning, 2022, 113(4): 1549-1565.

[IJCAI'19] Multi-View Multi-Label Learning with View-Specific Information Extraction
X. Wu, Q.-G. Chen, Y. Hu, **D.-B. Wang**, X. Chang, X. Wang, M.-L. Zhang
In: Proceedings of the 28th International Joint Conference on Artificial Intelligence, 2019, 3884-3890.

Honors

Deutscher Akademischer Austauschdienst (DAAD) AInet Fellow 2023

Tencent Rhino-Bird Elite Student Program 2022

National Scholarship 2022

Excellent Student Award, southeast University 2022

Special Freshman Scholarship for PhD Students 2019

Outstanding Graduates, Southwest University 2019

National Scholarship 2018

Excellent Student Award, Southwest University 2018

First Class Academic Scholarship, Southwest University 2016, 2017, 2018

Grants

Research on Uncertainty Calibration for Deep Models under Distribution Shift, *Youth Student Fundamental Research Project from NSFC*, 300,000 RMB, 2024.5 – 2025.12 (PI)

Weakly Supervised Learning with Consistency Regularization, *Postgraduate Research Program of Jiangsu Province*, 1,500 RMB, 2021.4 – 2023.12 (PI)

Academic Services

PC member for conferences such as ICLR (2024), NeurIPS (2023), ICML (2022, 2023, 2024), IJCAI (2022, 2023, 2024), AAAI (2021, 2023), KDD (2024), ECML/PKDD (2022), ACML (2021), ICMLA (2021), IAAI (2021, 2022), and reviewer for journals such as IEEE TPAMI, SCIENCE CHINA Information Sciences, ACM TIST, ACM TKDD, IEEE TMM, JCST, Neurocomputing.