

# Binhui Xie

Ph.D. Student  Beijing Institute of Technology  Beijing, China

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## EDUCATION

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### Beijing Institute of Technology

Beijing, China

*Ph.D. Student in School of Computer Science and Technology*

*Sep 2019 – 2025 (expected)*

- Advisor: Prof. Shuang Li and Prof. Chi Harold Liu

### Beijing Institute of Technology

Beijing, China


*B.Eng. in Software Engineering*

*Sep 2015 – Jul 2019*

- GPA: 3.5/4.0; Excellent Undergraduate

## PUBLICATIONS

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Binhui Xie's research interests are in transfer learning, data-efficient learning (domain adaptation & active learning) and multimodal learning. He has published a number of works in top-tier conferences and journals including **TPAMI** (2), **TKDE** (1), **NeurIPS** (1), **CVPR** (3), **AAAI** (4), and **MM** (2), etc. Three of his papers were selected for “**Oral/Highlight**” (acceptance rate: **2-4%**) by CVPR and AAAI. He has collected more than 670 citations according to  Google Scholar. The detailed paper list is presented in the following.

### Selected Publications –Peer-reviewed Journal Papers

- [1]. **Binhui Xie**, Shuang Li, Mingjia Li, Chi Harold Liu, Gao Huang, Guoren Wang. SePiCo: Semantic-Guided Pixel Contrast for Domain Adaptive Semantic Segmentation, *IEEE Transactions on Pattern Analysis and Machine Intelligence* (**TPAMI**, **Q1**, **IF: 23.6**), 45(7): 9004-9021 (2023).
- [2]. Shuang Li, **Binhui Xie**, Qiuxia Lin, Chi Harold Liu, Gao Huang, Guoren Wang. Generalized Domain Conditioned Network, *IEEE Transactions on Pattern Analysis and Machine Intelligence* (**TPAMI**, **Q1**, **IF: 23.6**), 44(8): 4093-4109 (2022).
- [3]. **Binhui Xie**, Shuang Li, Fangrui Lv, Chi Harold Liu, Guoren Wang, Dapeng Wu. A Collaborative Alignment Framework of Transferable Knowledge Extraction for Unsupervised Domain Adaptation, *IEEE Transactions on Knowledge and Engineering* (**TKDE**, **IF: 8.9**), 35:(7)6518-6533 (2023).

## Selected Publications –Peer-reviewed Conference Papers

- [4]. **Binhui Xie**, Shuang Li, Qingju Guo, Chi Harold Liu, Xinjing Cheng. Annotator: A Generic Active Learning Baseline for LiDAR Semantic Segmentation, *Neural Information Processing Systems (NeurIPS)*, 2023, New Orleans, Louisiana, USA.
- [5]. **Binhui Xie**, Longhui Yuan, Shuang Li, Chi Harold Liu, Xinjing Cheng. Towards Fewer Annotations: Active Learning via Region Impurity and Prediction Uncertainty for Domain Adaptive Semantic Segmentation, *IEEE Conference on Computer Vision and Pattern Recognition (CVPR, Oral)*, 2022, New Orleans, Louisiana, USA.
- [6]. **Binhui Xie**, Longhui Yuan, Shuang Li, Chi Harold Liu, Xinjing Cheng, Guoren Wang. Active Learning for Domain Adaptation: An Energy-based Approach, *AAAI Conference on Artificial Intelligence (AAAI)*, 2022, Virtual Conference.
- [7]. Mingjia Li\*, **Binhui Xie**\*(co-first author), Shuang Li, Chi Harold Liu, Xinjing Cheng. VBLC: Visibility Boosting and Logit-Constraint Learning for Domain Adaptive Semantic Segmentation under Adverse Conditions, *AAAI Conference on Artificial Intelligence (AAAI, Oral)*, 2023, Washington, DC, USA.
- [8]. Yuxin Fang, Wen Wang, **Binhui Xie**, Quan Sun, Ledell Yu Wu, Xinggang Wang, Tiejun Huang, Xinlong Wang, Yue Cao. EVA: Exploring the Limits of Masked Visual Representation Learning at Scale, *IEEE Conference on Computer Vision and Pattern Recognition (CVPR, Highlight)*, 2023, Vancouver, Canada.
- [9]. Longhui Yuan, **Binhui Xie**, Shuang Li. Robust Test-Time Adaptation in Dynamic Scenarios, *IEEE Conference on Computer Vision and Pattern Recognition (CVPR)*, 2023, Vancouver, Canada.
- [10]. Shuang Li, **Binhui Xie**, Jiashu Wu, Ying Zhao, Chi Harold Liu, Zhengming Ding. Simultaneous Semantic Alignment Network for Heterogeneous Domain Adaptation, *ACM Multimedia, (MM)* 2020, Virtual Conference.

## Full Publication List

- [11]. Shuang Li, Chi Harold Liu, **Binhui Xie**, Limin Su, Zhengming Ding, Gao Huang. Joint Adversarial Domain Adaptation, *ACM Multimedia (MM)*, 2019, Nice, France.
- [12]. Shuang Li, Kaixiong Gong, **Binhui Xie**, Chi Harold Liu, Weipeng Cao, Song Tian. Critical Classes and Samples Discovering for Partial Domain Adaptation, *IEEE Transactions on Cybernetics (TYCB, Q1, IF: 11.8)*, 53(9): 5641-5654 (2023).

- [13]. Jiashu Wu, Yang Wang, **Binhui Xie**, Shuang Li, Hao Dai, Kejiang Ye, Chengzhong Xu. Joint Semantic Transfer Network for IoT Intrusion Detection, *IEEE Internet of Things Journal (IoT, Q1, IF: 10.6)*, 10(4): 3368-3383 (2023).
- [14]. Shuang Li, Fangrui Lv, **Binhui Xie**, Chi Harold Liu, Jian Liang, Chen Qin. Bi-Classifer Determinacy Maximization for Unsupervised Domain Adaptation, *AAAI Conference on Artificial Intelligence (AAAI)*, 2021, Virtual Conference.
- [15]. Shuang Li, Chi Harold Liu, Limin Su, **Binhui Xie**, Zhengming Ding, C. L. Philip Chen, Dapeng Wu. Discriminative Transfer Feature and Label Consistency for Cross-Domain Image Classification, *IEEE Transactions on Neural Networks and Learning Systems (TNNLS, Q1, IF: 10.4)*, 31(11): 4842-4856 (2020).
- [16]. Shuang Li, Chi Harold Liu, Qiuxia Lin, **Binhui Xie**, Zhengming Ding, Gao Huang, Jian Tang. Domain Conditioned Adaptation Network, *AAAI Conference on Artificial Intelligence (AAAI)*, 2020, New York, NY, USA.

## Technical Reports

- Dina Bashkirova, Samarth Mishra, Diala Lteif, Piotr Teterwak, Donghyun Kim, Fadi Alladkani, James Akl, Berk Calli, Sarah Adel Bargal, Kate Saenko, Daehan Kim, Minseok Seo, YoungJin Jeon, Dong-Geol Choi, Shahaf Ettegui, Raja Giryes, Shady Abu-Hussein, **Binhui Xie**, Shuang Li. VisDA 2022 Challenge: Domain Adaptation for Industrial Waste Sorting, arXiv preprint arXiv:2303.14828.
- Shuang Li, **Binhui Xie**, Bin Zang, Chi Harold Liu, Xinjing Cheng, Ruigang Yang, Guoren Wang. Semantic Distribution-aware Contrastive Adaptation for Semantic Segmentation, arXiv preprint arXiv:2105.05013.
- **Binhui Xie**, Mingjia Li, Shuang Li. SPCL: A New Framework for Domain Adaptive Semantic Segmentation via Semantic Prototype-based Contrastive Learning, arXiv preprint arXiv:2111.12358.

## ACADEMIC SERVICES

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### Workshop Organizers

- Student Workshop@Valse 2022, Venue: Tianjin, China

### Reviewer/PC Member

- International Conference on Learning Representations (ICLR) 2023, 2024
- Neural Information Processing Systems (NeurIPS) 2023

- IEEE Conference on Computer Vision and Pattern Recognition (CVPR) 2021, 2022, 2023
- International Conference on Computer Vision (ICCV) 2021, 2023
- European Conference on Computer Vision (ECCV) 2022
- AAAI Conference on Artificial Intelligence (AAAI) 2021, 2022, 2023, 2024
- IEEE Transactions on Image Processing (TIP)
- Pattern Recognition (PR)
- IEEE Transactions on Knowledge and Data Engineering (TKDE)
- IEEE Transactions on Intelligent Vehicles (TIV)

### Teaching Assistant

- Machine Learning Essentials, Spring 2021 & Spring 2022

### AWARDS AND HONORS

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- **3rd place**, VisDA Challenge@NeurIPS, 2022.
- **Special Academic Scholarship**, Beijing Institute of Technology, 2022.
- **CETC GUORUI Scholarship**, CETC, 2021.
- **Excellent Undergraduate & Graduation Thesis**, Beijing Institute of Technology, 2019.

### INVITED TALKS

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- 2023.4, **VALSE** (recorded), Data-Efficient Semantic Segmentation.
- 2022.6, **ReadPaper** (recorded), Towards Fewer Annotations: Active Learning for Adaptive Semantic Segmentation.
- 2022.6, **Synced**, (online), Towards Fewer Annotations: Active Learning for Adaptive Semantic Segmentation.
- 2022.5, **Zhidx Course**, (online), Domain Adaptation meets Active Learning.
- 2022.03, **AI Drive** (online), Energy-based Active Domain Adaptation.
- 2021.10, **VALSE** (Hangzhou), spotlight & poster, Generalized Domain Conditioned Adaptation Network.

## VOYAGE

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Europe: France (2019), Monaco (2019)