BINHUI XIE (谢斌辉)

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EDUCATION

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

RESEARCH EXPERIENCE

Beijing Academy of Artificial Intelligence   Beijing, China

Research Intern in multimodal and vision research center   *Sep 2022 – Apr 2023*
- Mentored by Yue Cao and closely collaborated with Xinlong Wang, Yuxin Fang, Wen Wang, Quan Sun on the project "EVA: Visual Representation Fantasies".

AWARDS AND HONORS

- **Scholar Award & Top Reviewers**, NeurIPS, 2023.

- **National Scholarship** (国家奖学金), Ministry of Education of China, 2023.

- **Young Scientist Group** (青源会), BAAI, 2023.

- **3rd place**, VisDA Challenge@NeurIPS, 2022.

- **CETC GUORUI Scholarship** (国瑞奖学金), CETC, 2021.

- **Excellent Undergraduate & Graduation Thesis**, Beijing Institute of Technology, 2019.

PUBLICATIONS

Binhui Xie is currently a Ph.D. student at Beijing Institute of Technology, focusing on transfer learning, multimodal models, and efficient fine-tuning. He has published several works in top-tier journals and conferences including **TPAMI, TKDE, NeurIPS, CVPR, AAAI**, etc. Two were selected as 🏆 **ESI Highly Cited Paper**. His work of EVA was selected as the **7th most influential paper in CVPR 2023**. He has collected more than **1000 citations** according to **Google Scholar**. The detailed paper list is presented as follows.

Selected Publications

[1]. **EVA: Exploring the Limits of Masked Visual Representation Learning at Scale**
Yuxin Fang, Wen Wang, **Binhui Xie**, Quan Sun, Ledell Yu Wu, Xinggang Wang, Tiejun Huang, Xinlong Wang, Yue Cao
IEEE Conference on Computer Vision and Pattern Recognition (**CVPR, Highlight**), 2023.
CVPR 2023 Top-10 Influential Papers (Rank 7)

[2]. **SePiCo: Semantic-Guided Pixel Contrast for Domain Adaptive Semantic Segmentation**
Binhui Xie, Shuang Li, Mingjia Li, Chi Harold Liu, Gao Huang, Guoren Wang
IEEE Transactions on Pattern Analysis and Machine Intelligence (**TPAMI, IF: 23.6**), 2023.
🏆 **ESI Highly Cited Paper**

[3]. **Generalized Domain Conditioned Network**
Shuang Li, **Binhui Xie**, Qiuxia Lin, Chi Harold Liu, Gao Huang, Guoren Wang
IEEE Transactions on Pattern Analysis and Machine Intelligence (**TPAMI, IF: 23.6**), 2022.

[4]. **Towards Fewer Annotations: Active Learning via Region Impurity and Prediction Uncertainty for Domain Adaptive Semantic Segmentation**
Binhui Xie, Longhui Yuan, Shuang Li, Chi Harold Liu, Xinjing Cheng
IEEE Conference on Computer Vision and Pattern Recognition (**CVPR, Oral**), 2022.

[5]. **Active Learning for Domain Adaptation: An Energy-based Approach**
Binhui Xie, Longhui Yuan, Shuang Li, Chi Harold Liu, Xinjing Cheng, Guoren Wang
AAAI Conference on Artificial Intelligence (**AAAI**), 2022.

[6]. **Annotator: A Generic Active Learning Baseline for LiDAR Semantic Segmentation**
Binhui Xie, Shuang Li, Qingju Guo, Chi Harold Liu, Xinjing Cheng
Advances in Neural Information Processing Systems (**NeurIPS**), 2023.

[7]. **A Collaborative Alignment Framework of Transferable Knowledge Extraction for Unsupervised Domain Adaptation**
Binhui Xie, Shuang Li, Fangrui Lv, Chi Harold Liu, Guoren Wang, Dapeng Wu
IEEE Transactions on Knowledge and Engineering (**TKDE**), 2023.
🏆 **ESI Highly Cited Paper**

[8]. **VBLC: Visibility Boosting and Logit-Constraint Learning for Domain Adaptive Semantic Segmentation under Adverse Conditions**
Mingjia Li*, **Binhui Xie***(co-first author), Shuang Li, Chi Harold Liu, Xinjing Cheng
AAAI Conference on Artificial Intelligence (**AAAI, Oral**), 2023.

[9]. **Robust Test-Time Adaptation in Dynamic Scenarios**
Longhui Yuan, **Binhui Xie**, Shuang Li
IEEE/CVF Conference on Computer Vision and Pattern Recognition (**CVPR**), 2023.

[10]. **Simultaneous Semantic Alignment Network for Heterogeneous Domain Adaptation**
Shuang Li, **Binhui Xie**, Jiashu Wu, Ying Zhao, Chi Harold Liu, Zhengming Ding
ACM International Conference on Multimedia (**MM**), 2020.

Full Publications

[11]. **Joint Adversarial Domain Adaptation**
Shuang Li, Chi Harold Liu, **Binhui Xie**, Limin Su, Zhengming Ding, Gao Huang
ACM International Conference on Multimedia (**MM**), 2019.

[12]. **Bi-Classifier Determinacy Maximization for Unsupervised Domain Adaptation**
Shuang Li, Fangrui Lv, **Binhui Xie**, Chi Harold Liu, Jian Liang, Chen Qin
AAAI Conference on Artificial Intelligence (**AAAI**), 2021.

[13]. **Critical Classes and Samples Discovering for Partial Domain Adaptation**
Shuang Li, Kaixiong Gong, **Binhui Xie**, Chi Harold Liu, Weipeng Cao, Song Tian
IEEE Transactions on Cybernetics (**TYCB**), 2023.

[14]. **Joint Semantic Transfer Network for IoT Intrusion Detection**
Jiashu Wu, Yang Wang, **Binhui Xie**, Shuang Li, Hao Dai, Kejiang Ye, Chengzhong Xu
IEEE Internet of Things Journal (**IoTJ**), 2023.

[15]. **Domain Conditioned Adaptation Network**
Shuang Li, Chi Harold Liu, Qiuxia Lin, **Binhui Xie**, Zhengming Ding, Gao Huang, Jian Tang
AAAI Conference on Artificial Intelligence (**AAAI**), 2020.

[16]. **Discriminative Transfer Feature and Label Consistency for Cross-Domain Image Classification**
Shuang Li, Chi Harold Liu, Limin Su, **Binhui Xie**, Zhengming Ding, CL Philip Chen, Dapeng Wu
IEEE Transactions on Neural Networks and Learning Systems (**TNNLS**), 2020.

[17]. **VisDA 2022 Challenge: Domain Adaptation for Industrial Waste Sorting**
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 Ettedgui, Raja Giryes, Shady Abu-Hussein, **Binhui Xie**, Shuang Li
Proceedings of the NeurIPS 2022 Competitions Track, 2022.

Technical Reports

- **Few Clicks Suffice: Active Test-Time Adaptation for Semantic Segmentation**
  Longhui Yuan, Shuang Li, Zhuo He, **Binhui Xie**
  arXiv preprint arXiv:2312.01835.

- **Generalized Robust Test-Time Adaptation in Continuous Dynamic Scenarios**
  Shuang Li, Longhui Yuan, **Binhui Xie**, Tao Yang
  arXiv preprint arXiv:2310.04714.

- **SPCL: A New Framework for Domain Adaptive Semantic Segmentation via Semantic Prototype-based Contrastive Learning**
  Binhui Xie, Mingjia Li, Shuang Li
  arXiv preprint arXiv:2111.12358.

- **Semantic Distribution-aware Contrastive Adaptation for Semantic Segmentation**
  Shuang Li, **Binhui Xie**, Bin Zang, Chi Harold Liu, Xinjing Cheng, Ruigang Yang, Guoren Wang
  arXiv preprint arXiv:2105.05013.

ACADEMIC SERVICES

Conference Reviewer ICML'24, ICLR'24/23, NeurIPS'23, CVPR'24/23/22/21, ICCV'23/21, ECCV'24/22...

- **Top Reviewers**, NeurIPS, 2023

Journal Reviewer IJCV, T-IP, T-KDE, T-CSVT, Pattern Recognition, T-IV...

Workshop Organizer Student Workshop@VALSE (2022)

Teaching Assistant Machine Learning Essentials, Spring 2021 & Spring 2022

INVITED TALKS

- 2023.11, **AI TIME** (online), A Generic Active Learning Baseline in LiDAR Semantic Segmentation

- 2023.4, **VALSE** (recorded), Data-Efficient Semantic Segmentation.

- 2022.6, **ReadPaper** (recorded), Active Learning for Adaptive Semantic Segmentation.

- 2022.6, **Synced** (online), Towards Fewer Annotations for 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.