

Zhaowei Zhu

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Education

University of California, Santa Cruz

CA, USA, 09/2019 – present

Ph.D. in Computer Science; GPA: 3.93/4.00

Advisor: Prof. Yang Liu

University of Chinese Academy of Sciences

Shanghai, China, 09/2016 – 07/2019

ShanghaiTech University

M.S. in Communication and Information System; GPA: 3.86/4.00

Advisor: Prof. Xiliang Luo

University of Electronic Science and Technology of China

Chengdu, China, 09/2012 – 07/2016

B.S. in Communication Engineering; GPA: 3.87/4.00

Advisor: Prof. Wenhui Xiong

Research Interests

Weakly-supervised learning Focus on the cases when labels are imperfect, e.g., missing or noisy.

Milestones: Algorithms for learning with noisy labels [ICLR'21, CVPR'21 oral, ICLR'23, Preprints #1]. Estimating the statistical property of noisy labels (i.e. noise transition matrix) [ICML'21, ICML'22]. Detecting corrupted labels [ICML'22]. Studying real-world human-level label errors [ICLR'22].

Machine learning fairness Reveal & Understand the fairness concerns in modern machine learning algorithms and propose methods to evaluate and mitigate disparity.

Milestones: Disparate impact of semi-supervised learning [ICLR'22]. Evaluate fairness without sensitive attributes, and propose the corresponding disparity mitigation algorithm [Preprint #2]. Fairness without harm [ongoing].

Federated learning Focus on federated machine learning and bandit learning.

Milestones: Federated multi-armed bandit [ACM SIGMETRICS'21]. FL with noisy clients [ongoing].

Selected Publications and Preprints

(*Equal contributions)

Conference Papers

12. [ICML'23] **Zhaowei Zhu***, Yuanshun Yao*, Jiankai Sun, Yang Liu, Hang Li. Weak Proxies are Sufficient and Preferable for Fairness with Missing Sensitive Attributes.
11. [KDD'23] Jiaheng Wei*, **Zhaowei Zhu***, Tianyi Luo, Ehsan Amid, Abhishek Kumar, Yang Liu. To aggregate or not? Learning with separate noisy labels.
10. [ICLR'23] Hao Cheng*, **Zhaowei Zhu***, Xing Sun, Yang Liu. Mitigating memorization of noisy labels via regularization between representations.
9. [ICML'22] **Zhaowei Zhu**, Jialu Wang, Yang Liu. Beyond images: label noise transition matrix estimation for tasks with lower-quality features.
8. [ICML'22] **Zhaowei Zhu**, Zihao Dong, Yang Liu. Detecting corrupted labels without training a model to predict.
7. [ICLR'22] **Zhaowei Zhu***, Tianyi Luo*, Yang Liu. The rich get richer: disparate impact of semi-supervised learning.

6. [ICLR'22] Jiaheng Wei*, **Zhaowei Zhu***, Hao Cheng, Tongliang Liu, Gang Niu, Yang Liu. Learning with noisy labels revisited: a study using real-world human annotations.
5. [ICML'21] [IJCAI-WSRL Workshop *Best Paper Award*] **Zhaowei Zhu**, Yiwen Song, and Yang Liu. Clusterability as an alternative to anchor points when learning with noisy labels.
4. [CVPR'21 *oral*] **Zhaowei Zhu**, Tongliang Liu, and Yang Liu. A second-order approach to learning with instance-dependent label noise. (*oral presentation* $\approx 4\%$)
3. [ACM SIGMETRICS'21] **Zhaowei Zhu***, Jingxuan Zhu*, Ji Liu, and Yang Liu. Federated bandit: a gossiping approach. (AR $\approx 12.1\%$)
2. [ICLR'21] Hao Cheng*, **Zhaowei Zhu***, Xingyu Li, Yifei Gong, Xing Sun, and Yang Liu. Learning with instance-dependent label noise: a sample sieve approach.
1. [NeurIPS'21] Jingkang Wang*, Hongyi Guo*, **Zhaowei Zhu***, and Yang Liu. Policy learning using weak supervision.

Journal Articles

2. [TPDS'19] **Zhaowei Zhu**, Ting Liu, Yang Yang, and Xiliang Luo. BLOT: Bandit learning-based offloading of tasks in fog-enabled networks. *IEEE Trans. Parallel Distrib. Syst.* 2019.
1. [TWC'18] **Zhaowei Zhu**, Shengda Jin, Yang Yang, Honglin Hu, and Xiliang Luo. Time reusing in D2D-enabled cooperative networks. *IEEE Trans. Wireless Commun.* 2018.

Employment Experience

Research Intern, Dr. Kevin Yao and Dr. Hang Li ByteDance AI-Lab-Research, Mountain View, 06/2022 – 11/2022
- Conduct research on machine learning fairness. Milestone: Preprint #2.

Weakly supervised learning, Prof. Yang Liu RA @ UC Santa Cruz, Fall 2019 – present

CSE 20, Python, Prof. Alex Rudnick TA @ UC Santa Cruz, Fall 2021

CSE 142, Machine Learning, Prof. Yang Liu TA @ UC Santa Cruz, Spring 2020

SI 140, Probability and Statistics, Prof. Ziyu Shao TA @ ShanghaiTech University, Fall 2017

EE 150, Signals and Systems, Prof. Xiliang Luo TA @ ShanghaiTech University, Spring 2017

Professional Services

Organizer:

IJCAI-ECAI 2022 Learning and Mining with Noisy Labels Challenge: competition.noisylabels.com

Conference Reviewer/PC:

ICLR 2022–2023, ICML 2022–2023, NeurIPS 2021–2022, KDD 2023, ACM FAccT 2023, AAAI 2021, CVPR 2021.

Journal Reviewer:

IEEE Transactions on Communications, IEEE Transactions on Wireless Communications

Awards

Best Paper Award 08/2021

@ IJCAI-WSRL Workshop. *Clusterability as an alternative to anchor points when learning with noisy labels.*

National Scholarship 09/2017 – 06/2018

@ University of Chinese Academy of Sciences

Merit Student Award

09/2017 – 06/2018

@ *University of Chinese Academy of Sciences***Undergraduate Student Scholarships**

09/2012 – 06/2015

@ *University of Electronic Science and Technology of China*

Skills

Python, PyTorch, JAX, TensorFlow, MATLAB, C, \LaTeX .

Last updated: June 29, 2023

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