

YIJUN BIAN

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Employment

01/08/2024 to present	MSCA Postdoc , University of Copenhagen (UCPH) Machine Learning Section, Dept. Computer Science Marie Skłodowska-Curie Actions (MSCA) Postdoctoral Fellowship	Copenhagen, Denmark Supervisor: Prof. Yevgeny Seldin
24/03/2023 – 30/07/2024	Research fellow , National University of Singapore	Singapore
02/12/2020 – 22/03/2023	Algorithm engineer , Shanghai Institute of Microsystem & Information Technology	Shanghai, China
02/09/2014 – 20/11/2020	Graduate research assistant , USTC Topics: machine learning, ensemble learning Dept. Computer Science & Technology, University of Science and Technology of China	Hefei, Anhui, China Supervisor: Prof. Huanhuan Chen
01/11/2018 – 30/04/2019	Visiting research scholar , Texas A&M University DATA Lab, Dept. Computer Science & Engineering	College Station, TX, United States Adviser: Prof. Xia (Ben) Hu
01/03/2016 – 31/07/2016	Teaching assistant , USTC Course: Mathematical Analysis (B2)	Hefei, Anhui, China School of Mathematical Sciences

Education

02/09/2014 – 20/11/2020	University of Science and Technology of China (USTC)	Hefei, Anhui, China
07/12/2020	Awarded <i>Doctor of Engineering</i>	Supervisor: Prof. Huanhuan Chen
26/08/2020	Dissertation defence: Research and Applications of Diversity in Ensemble Classification Ph.D. in Computer Science & Technology, successive postgraduate and doctoral programme Overall GPA: 3.65/4.30 (Grade: 86.87/100.00) Ranking: 2/37 (10/114 as MSc student)	
02/09/2010 – 01/07/2014	Northwest A&F University (NWAU)	Yangling, Shaanxi, China
01/07/2014	Awarded <i>Bachelor of Natural Sciences</i> B.Sc. in Information and Computing Science (aka. Computational Mathematics) Overall GPA: 3.44/4.00 (Grade: 87.68/100.00) Ranking: 5/47	College of Science

Publications¹

Peer-reviewed articles

- A4 Ming Chen, **Yijun Bian**, Nanguang Chen, and Anqi Qiu*, “Orthogonal Mixed-Effects Modeling for High-Dimensional Longitudinal Data: An Unsupervised Learning Approach,” In *IEEE Transactions on Medical Imaging*, vol. 44, no. 1, pp. 207–220, Jan 2025, doi: [10.1109/TMI.2024.3435855](https://doi.org/10.1109/TMI.2024.3435855).
- A3 **Yijun Bian**, Qingquan Song, Mengnan Du, Jun Yao, Huanhuan Chen*, and Xia Hu, “Subarchitecture Ensemble Pruning in Neural Architecture Search,” In *IEEE Transactions on Neural Networks and Learning Systems*, vol. 33, no. 12, pp. 7928–7936, Dec 2022, doi: [10.1109/TNNLS.2021.3085299](https://doi.org/10.1109/TNNLS.2021.3085299).
- A2 **Yijun Bian** and Huanhuan Chen*, “When Does Diversity Help Generalization in Classification Ensembles?” In *IEEE Transactions on Cybernetics*, vol. 52, no. 9, pp. 9059–9075, Sept 2022, doi: [10.1109/TCYB.2021.3053165](https://doi.org/10.1109/TCYB.2021.3053165).
- A1 **Yijun Bian**, Yijun Wang, Yaqiang Yao, and Huanhuan Chen*, “Ensemble Pruning Based on Objection Maximization With a General Distributed Framework,” In *IEEE Transactions on Neural Networks and Learning Systems*, vol. 31, no. 9, pp. 3766–3774, Sept 2020, doi: [10.1109/TNNLS.2019.2945116](https://doi.org/10.1109/TNNLS.2019.2945116).

Peer-reviewed conference paper

- C1 Abhijith Sharma, **Yijun Bian**, Vatsal Nanda, Phil Munz, and Apurva Narayan*, “Vulnerability of CNNs against Multi-Patch Attacks,” In *Proceedings of the 2023 ACM Workshop on Secure and Trustworthy Cyber-Physical Systems (SaT-CPS’23)*, pp. 23–32, Apr 2023, doi: [10.1145/3579988.3585054](https://doi.org/10.1145/3579988.3585054).

Manuscripts under review

- U8 **Yijun Bian**, “Fairness Research For Machine Learning Should Integrate Societal Considerations,” 2025.
- U7 Lei You*, **Yijun Bian**, and Lele Cao, “Refining Counterfactual Explanations With Joint-Distribution-Informed Shapley Towards Actionable Minimality,” *arXiv preprint arXiv:2410.05419*, 2024.
- U3 Jinghan Huang#, Qiufeng Chen#, **Yijun Bian**, Pengli Zhu, Nanguang Chen, Moo K. Chung, and Anqi Qiu*, “Advancing Graph Neural Networks with HL-HGAT: A Hodge-Laplacian and Attention Mechanism Approach for Heterogeneous Graph-Structured Data,” *arXiv preprint arXiv:2403.06687*, 2023.
- U2 **Yijun Bian***, Kun Zhang, “Increasing Fairness via Combination with Learning Guarantees,” *arXiv preprint arXiv:2301.10813v1*, 2023.

Manuscripts in revisions

- U6 Alina Basharat, **Yijun Bian**, Ping Xu*, and Zhi Tian, “Towards Trustworthy Federated Learning,” 2024.
- U5 **Yijun Bian***, Yujie Luo#, and Ping Xu, “Approximating Discrimination Within Models When Faced With Several Non-Binary Sensitive Attributes,” *arXiv preprint arXiv:2408.06099*, 2024.
- U4 **Yijun Bian***, and Yujie Luo#, “Does Machine Bring in Extra Bias in Learning? Approximating Fairness in Models Promptly,” *arXiv preprint arXiv:2405.09251*, 2024.

U1 Abhijith Sharma[#], **Yijun Bian^{#*}**, Phil Munz, and Apurva Narayan, “Adversarial Patch Attacks and Defences in Vision-Based Tasks: A Survey,” *arXiv preprint arXiv:2206.08304*, 2022.

Released code of research projects

17/01/2024 – 05/09/2024	ApproxBias (URL: https://github.com/eustomaqua/ApproxBias). Official released code for the papers U4&U5, that is, “Does Machine Bring in Extra Bias in Learning? Approximating Fairness in Models Promptly” and “Approximating Discrimination Within Models When Faced With Several Non-Binary Sensitive Attributes.”
16/08/2022 – 29/09/2022	SAEP (URL: https://github.com/eustomaqua/SAEP). Official released code for the paper entitled “Subarchitecture Ensemble Pruning in Neural Architecture Search.”
16/04/2020 – 14/09/2021	EPFD (URL: https://github.com/eustomaqua/EPFD). Official released code for the paper entitled “Ensemble Pruning Based on Objection Maximization With a General Distributed Framework.”
24/07/2019 – 19/04/2020	PyEnsemble (URL: https://github.com/eustomaqua/PyEnsemble). This is an open-source library for ensemble learning methods, diversity measures, and ensemble pruning methods.

Teaching and supervision

27/01/2025 to present	Supervision to two BSc students Copenhagen, Denmark Supervising two BSc students with their Bachelor thesis projects
31/07/2023 – 24/07/2024	Co-supervision to two MEng students Singapore Helping supervise two MEng students with research and scientific manuscripts, in collaboration with Prof. Qiu at the National University of Singapore
06/03/2022 – 03/02/2023	Co-supervision to one MSc student Remotely Helped supervise a MSc student with research and scientific manuscripts, in online collaboration with Prof. Narayan at the University of British Columbia
01/03/2016 – 31/07/2016	Teaching assistant, USTC Hefei, Anhui, China Course: Mathematical Analysis (B2) School of Mathematical Sciences Duties included grading the homework and examination papers of students, taking exercise classes, and answering questions from students

Other scientific qualifications

Journal reviewer

28/05/2024 to present	Information Sciences	two completed
13/01/2024 to present	IEEE Transactions on Knowledge and Data Engineering	one completed
06/06/2023 to present	Scientific Reports	three completed
31/05/2023 to present	IEEE Transactions on Pattern Analysis and Machine Intelligence	five completed
05/03/2023 to present	Journal of Supercomputing	one completed
23/09/2021 to present	IEEE Transactions on Emerging Topics in Computational Intelligence	7 completed, 1 ongoing
13/11/2020 to present	Neural Networks	eight completed
06/08/2016 to present	IEEE Transactions on Neural Networks and Learning Systems	19 completed

Conference reviewer

03/10/2024 – 08/10/2024	M3L’24 (NeurIPS Workshop, Mathematics of Modern Machine Learning)	one completed
30/11/2023 – 15/12/2023	PPAI’24 (AAAI Workshop on Privacy-Preserving Artificial Intelligence)	two completed

Selected honours and awards

15/11/2023	Grant awardee, under the Horizon Europe Marie Skłodowska-Curie Actions Postdoctoral Fellowships (MSCA PF) call 2022	European Commission
04/04/2023	Seal of Excellence certificate, under the MSCA PF call 2022	European Commission
01/11/2019	GDC (Awarded from the Global Digital Creations Holdings Limited) scholarship	USTC
19/04/2018	International Exchange Funding for Excellent Students	USTC
11/09/2018, 30/09/2017, 30/09/2016	Second-class academic scholarship, for PhD students	USTC
29/09/2015	First-class academic scholarship, for MSc students	USTC
30/09/2014	Second-class academic scholarship, for MSc students	USTC
30/06/2014	Outstanding undergraduate graduation thesis (design)	NWAFU
20/12/2013	President scholarship	NWAFU
31/01/2013	Excellence award of the undergraduate innovation forum and finding presentation	NWAFU
31/12/2013, 06/12/2012, 20/12/2011	Merit student, for three consecutive years	NWAFU
31/10/2013, 31/10/2012, 31/10/2011, 31/03/2011	First-class professional scholarship, four times in a row	NWAFU

^{1#}Equal contribution; *Corresponding author.