YIJUN BIAN

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EDUCATION

University of Science and Technology of China, Hefei, Anhui, China *Sept 2014 to Nov 2020*
- Ph.D. in Computer Science and Technology *(Since Sept 2016)*
- Master student in Computer Science and Technology *(Sept 2014 to Aug 2016)*
- School of Computer Science and Technology Supervisor: Prof. Huanhuan Chen
- Dissertation: Research and Applications of Diversity in Ensemble Classification
- Overall GPA: 3.65 (Grade: 86.87) Ranking: 2/37 (10/114 as a master student)

Northwest A&F University (NWAFU), Yangling, Shaanxi, China *Sept 2010 to Jul 2014*
- B.S. in Computational Mathematics, College of Science
- Overall GPA: 3.44 (Grade: 87.68) Ranking: 5/47

RESEARCH INTERESTS

Ensemble Learning, Machine Learning, AutoML, Fairness in ML

PUBLICATIONS

[1] **Y Bian** and H Chen, "When Does Diversity Help Generalization in Classification Ensembles?" *IEEE Transactions on Cybernetics*, early access, Feb. 26, 2021, doi: 10.1109/TCYB.2021.3053165.

[2] **Y Bian**, Y Wang, Y Yao, and H Chen, "Ensemble Pruning Based on Objection Maximization With a General Distributed Framework," *IEEE Transactions on Neural Networks and Learning Systems*, vol. 31, no. 9, pp. 3766–3774, Sept 2020.

[3] **Y Bian**, Q Song, M Du, J Yao, H Chen, and X Hu, "Subarchitecture Ensemble Pruning in Neural Architecture Search," *IEEE Transactions on Neural Networks and Learning Systems*, early access, Jun. 18, 2021, doi: 10.1109/TNNLS.2021.3085299.

TECHNICAL SKILLS

Programming Languages: Python, MATLAB, LaTeX, C/C++
Deep Learning Tools: Keras, TensorFlow, PyTorch

PROJECTS

[1] **EPFD** *https://github.com/eustomaqua/EPFD* *Apr 2020*
Official released code for the published paper "Ensemble pruning based on objection maximization with a general distributed framework"

[2] **PyEnsemble** *https://github.com/eustomaqua/PyEnsemble* *Jul 2019 to Apr 2020*
Open-source library for ensemble learning methods, involving existing diversity measures and ensemble pruning methods

EXPERIENCES/INTERNSHIPS

Shanghai Institute of Microsystem and Information Technology, Shanghai, China
- *Algorithm Engineer*, Bionic Vision System Laboratory *Dec 2020 to Present*
  - Implemented the semi-global matching algorithm in C++ to estimate a dense disparity map from a rectified stereo image pair, assessed the effect of image quality on the semi-global matching algorithm, and learned the usage of Dlib and Xilinx HLS.
  - Applied for two grants with proposals to research ensemble learning, diversity, and fairness.
  - Reviewed literature about neural architecture search and provided a report.
  - Reproducing visual recognition models and exploring how to improve the performance.

TENCENT, Shenzhen, Guangdong, China
- *Research Intern*, Platform & Content Group (PCG) *Dec 2019 to Mar 2020*

- Attempted to gather different blocks from existing video models and construct an ensemble automatically.
- Reproduced and modified SCAN using different backbones, reforming video models by assembling different levels of results from themselves.
- Reproduced and modified EWC using different video models on HMDB51 and UCF101.
- Attempted to gather weak models by predicting their performance provided weights.

RICH AI, Beijing, China

- *NLP Algorithm Engineer Intern*, NLP Group — *Aug to Oct 2019*
  - Wrote the technical part of four patents and that of the "NLP Algorithms Whitepaper".
  - Evaluated the effectiveness of eight different tools for the "Named Entity Recognition" task on the Chinese corpus.
  - Evaluated the performance of predicting keywords for a case study, describing the precision/recall/F1 score of five patterns (perfect matching, partial matching, and overlap).
  - Reproduced and modified the Commonsense Transformers to make it suitable for the Chinese corpus for automatic knowledge graph construction on IPRE and BaiduKE.
- *Image Algorithm Engineer Intern*, Video Team — *Aug 2018*
  - Reproduced the performance of existing models for the person re-identification problem, achieving 98.34%, 89.05%, 92.55%, and 59.50% top-5 accuracy on the cuhk, DukeMTMC, Market1501, and SenseReID data sets, respectively.

Texas A&M University, College Station, Texas, United States

- *Visiting Research Scholar*, Data Analytics at Texas A&M (DATA) Lab — *Nov 2018 to Apr 2019*
  - Department of Computer Science & Engineering — Adviser: Prof. Xia (Ben) Hu
  - Collaborative research on utilizing ensemble learning in neural architecture search, published in the IEEE Transactions on Neural Networks and Learning Systems.

University of Science and Technology of China, Hefei, Anhui, China

- *Graduate Research Assistant*, Dept. of Computer Science & Technology — *Sept 2014 to Nov 2020*
  - The USTC-Birmingham Joint Research Institute in Intelligent Computation and Its Applications (UBRI) — Supervisor: Prof. Huanhuan Chen
- *Teaching Assistant*, School of Mathematical Sciences — *Mar to Jul 2016*
  - Course: Mathematical Analysis (Undergraduate)

PROFESSIONAL SERVICES

Journal Reviewer: *IEEE Transactions on Neural Networks and Learning Systems, Neural Networks*

Open Source Contributor

- Arctic Code Vault Contributor in the 2020 GitHub Archive Program — *2020*
- *AdaNet* (Google's open-source project), merged pull request — *Oct 2019*
- *OpenNE*, merged pull request — *Aug 2019*
- *AutoKeras*, merged pull requests a and b in the blocks branch — *Jun 2019*

Volunteer: *GDG Shanghai* (Google Developer Groups), wrote WeChat articles — *Mar 2021 to Present*

MAJOR HONORS & AWARDS

Awarded at the University of Science and Technology of China (USTC)

- GDC Technology Scholarship — *Oct 2019*
- International Exchange Funding for Excellent Students — *Apr 2018*
- Second-class Academic Scholarship — *Sept 2018 to Sept 2016, Sept 2014*
- First-class Academic Scholarship — *Sept 2015*

Awarded at the Northwest A&F University (NWAFU)

- Outstanding Undergraduate Graduation Thesis (Design) — *Jun 2014*
- President Scholarship — *Dec 2013*
- Excellence Award of the Undergraduate Innovation Forum and Finding Presentation — *Jan 2013*
- Merit Student, for three consecutive years — *Dec 2013 to Dec 2011*
- First-class Professional Scholarship, four times in a row — *Oct 2013 to Mar 2011*
- Best Debater in the Freshman Cup Debate — *Nov 2010*