WEIZHI GAO

CONTACT INFORMATION

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Updated Date: Nov, 11th, 2022

EDUCATION

Beijing Normal University, Beijing, China *Sep, 2016 - Jun, 2020*
Bachelor of Science

- **GPA:** 90.42/100
- Advised by Huajie Chen
- Majoring in Mathematics
- Liyun Class by the National Top-notch Talent Cultivation Plan

Tufts University, Boston, the United States *Jul, 2018 - Aug, 2018*
Summer School

- Sponsored by full scholarship
- Participating Coding Bootcamp (R, MATLAB, PYTHON)

University of Chinese Academy of Sciences, Beijing, China *Sep, 2020 - Present*
Master of Science

- **GPA:** 3.76/4.0
- Advised by Yingjie Tian
- Majoring in machine learning

SERVICE AND AWARDS

Service

- Serve as a reviewer for International Conference on Learning Representations 2023 (ICLR).
- Serve as a reviewer for ACM International Conference on Web Search and Data Mining 2023 (WSDM).

Awards

- First Prize of New Student Scholarship (top 5%) *Sep, 2016*
- Second Prize of Beijing Normal University Mathematical Modeling Contest *Sep, 2018*
- Full scholarship for Tufts University summer school (top 5%) *July, 2018*
- Second Prize of Scholarship of Beijing Normal University *Sep, 2016 - Sep, 2019*
- Academic Scholarship of School of Mathematics Science, UCAS *Sep, 2020 - Sep, 2022*

RESEARCH INTERESTS

I am mainly interested in reliable AI, leading machine learning to reliable tools that can be widely deployed in the real scenario. To achieve this, I focus on uncertainty, robustness, and adaptability of deep learning. My long-term research goal is to develop AI to take responsibility for its decisions, and to enable AI to be used in accuracy-sensitive tasks (medical diagnosis, automatic driving, etc.).

- Model Uncertainty: Calibration
- Model Robustness: Out of Distribution Detection, Adversarial Attack
- Model Adaptability: Transfer Learning, Few Shot Learning

RESEARCH EXPERIENCE

State Key Laboratory of Cognitive Neural Science and Learning, Beijng Normal University May, 2018 - May, 2019
Undergraduate, Advisor: Dajun Xing

- **Topic:** The Analysis of Luminosity Encoding Rule
- **Contribution:** Analyze the luminosity encoding rule in V1 cortex with neural network tools.
- Supported by undergraduate research funding

School of Mathematics Science, Beijing Normal University Aug, 2019 - Jun, 2020
Undergraduate, Advisor: Yingjie Tian

- **Topic:** Extract unstructured information from Chinese electronic medical records.
- **Contribution:** Survey and implement traditional methods and deep learning methods on Chinese electronic medical records.
- Undergraduate thesis

School of Mathematics Science, UCAS Sep, 2021 - Nov, 2021
Postgraduate, Advisor: Yingjie Tian

- **Topic:** A Survey of Transfer Learning
- **Contribution:**Survey for existing popular transfer learning methods and the application of transfer learning in different tasks.
- Topic of postgraduate thesis.

School of Mathematics Science, UCAS Dec, 2021- Mar, 2022
Postgraduate, Advisor: Yingjie Tian

- **Topic:** Two-stage Training Strategy Combined with Neural Network for Segmentation of Internal Mammary Artery Graft
- **Contribution:** Construct a novel dataset, and propose an effective two-stage training strategy for internal mammary artery graft segmentation
- **Publication:** Biomedical Signal Processing and Control

School of Mathematics Science, UCAS Mar, 2022 - Sep, 2022
Postgraduate, Advisor: Dongkuan Xu

- **Topic:** Improving Long-Tailed Classification by Disentangled Variance Transfer
- **Contribution:** Propose a disentangled variance transfer method, DisVar, to improve the effectiveness of knowledge transfer in long-tailed learning
- **Publication:** Under review in Journal of Internet of Things

School of Mathematics Science, UCAS Aug, 2022 - Present
Postgraduate, Advisor: Dongkuan Xu

- **Topic:** OOD detection in 3D segmentation
- **Progress:** Construct the pipeline for both OOD detection and 3D segmentation

School of Mathematics Science, UCAS Aug, 2022 - Present
Postgraduate, Advisor: Dongkuan Xu

- **Topic:** Robustness in compression of NLP models
- **Progress:** Find that student models in distillation are less sensitive to adversarial training

School of Mathematics Science, UCAS Oct, 2022 - Present
Postgraduate, Advisor: Dongkuan Xu

- **Topic:** Reliable Sparsity: Prune with Calibration
- **Progress:** Find that the calibration drop caused by pruning can not be recovered by naive post calibration methods

PUBLICATIONS

1 Shiding Sun, Yingjie Tian, Zhiquan Qi, Yang Wu, **Weizhi Gao**, and Yahe Wu. "Two-stage training strategy combined with neural network for segmentation of internal mammary artery graft." Biomedical Signal Processing and Control 80 (2023): 104278.

2 Yingjie Tian, **Weizhi Gao**, Qin Zhang, Pu Sun and Dongkua Xu. "Improving Long-Tailed Classification by Disentangled Varian." Under review in Journal of Internet of Things

SKILLS

Programming: Python, C, R, Matlab, LaTeX, etc.

Socialization: Easygoing and desiring for academic cooperation