Bonian Han

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Education

Hangzhou Dianzi University *BS in Statistics*   *Sept 2021 – July 2025*
- GPA: 84.80

Skills&Interest

Research Interest: Computer Vision, Trustworthy Neural Networks, Image Analysis, Graph Neural Networks, Deep Learning

Programming: Python, PyTorch, C/C++, R, Linux, SQL Server, Markdown

Languages: TOEFL: 91, GRE: 326 (Verbal: 156, 69th percentile; Quantitative: 170, 92th)

Publications

1. Zulu, J., **Han, B.**, Alsmadi, I., and Liang, G. (2024, March). Contextualized Embedding-Based Approach for Enhanced SQL Injection Detection. In *Proceedings of the 62nd ACM SouthEast Annual Conference.* DOI:10.1145/3603287.3651187 ↗.

2. **Han, B.**, Moran, C., Yang, J., Lee, Y., Cao, Z., and Liang, G. (2024, July). Multi-Scale Self-Supervised Consistency Training for Trustworthy Medical Imaging Classification. In *Proceedings of the 46th Annual International Conference of the IEEE Engineering in Medicine and Biology Society (EMBC).* Podium (acceptance rate approx. 28%). H5-Index: 48. DOI: 10.1109/EMBC53108.2024.10782322 ↗.

3. **Han, B.**, Yuktha, Priya, Masupalli., Liang, G. (2024, October). Improving Medical Imaging Model Calibration through Probabilistic Embedding. *2024 IEEE International Conference on Big Data (IEEE BigData 2024)* (accepted).

4. **Han, B.**, Liang, G. (2025, January). Trustworthy Imaging Classification with Probabilistic Embedding through Gaussian Distribution Modeling*2025 IEEE International Conference on Image Processing (ICIP)* (under review).

Research Experience

Texas A&M University-San Antonio   *Nov 2023 – Present*
- Under the supervision of Dr.Gongbo Liang, an Assistant Professor at Texas A&M University-San Antonio, on related computer vision research, focusing on model calibration and feature extraction techniques to reduce model bias, including probabilistic embedding and model pruning for interference robustness.
- Participating in discussions to cultivate innovative ideas and translating these concepts into code for practical implementation and rigorous testing.
- To date, three papers have been accepted for publication: one at EMBC, one at ACMSE, and one at Big Data. Additionally, one paper is in progress.
- Delivered a lecture presentation by myself at the EMBC Conference in Orlando, Florida, in July.

Hangzhou Dianzi University   *Sept 2024 – Present*
- Worked with Yifan Lu and Supervisor Dr.Pengfei Jiao at Hangzhou Dianzi University on Graph Neural Networks (GNNs) for the prediction and interpretation of 3D image subgraphs.
- Enhanced GNN classification performance by integrating ViT (Vision Transformer) to transform topological graphs into matrices for improved predictions.
- An ongoing follow-up project focused on 3D image prediction using PGExplainer.

Working & Volunteer Experience

Ballkids Coach & Manager *Hangzhou, China*
Hangzhou Open ATP 250 and ATP Challenger *Sept 2024*
- Trained professional ballkids (ages 9-14) on match responsibilities, ensuring understanding of court etiquette.
- Coordinated with event supervisors to ensure matches ran smoothly while safeguarding ballkids' rights.
- Developed contingency plans for emergencies, preparing ballkids to adapt to changing circumstances.

Volunteer Tennis Ballkids & Ceremony Assistant *Hangzhou, China*
19th Asian Games and Asian Para Games *Sept 2023 – Oct 2023*
- Served as a ball kid in tennis events, ensuring smooth gameplay by managing the court and assisting players.
- As a core volunteer, supported event managers in organizing activities and contributed to the finals at the Asian Games and Para Games, where positions were reduced daily due to the knockout format of the tennis competitions.
- Participated in interviews and filming with China Central Television (CCTV) and other media outlets to promote ball kids.
- Awarded titles of Outstanding Volunteer and Excellent Volunteer.

Projects

Probabilistic Embedding *Feb 2024(with Dr. Liang)*
- Developed a probabilistic generative model featuring an encoder that replaces fully connected layers with flexible neural network layers, enhancing adaptability. The decoder utilizes deconvolution to improve predictive performance and model robustness.
- This framework employs probabilistic embedding to capture complex data distributions, address model uncertainty, and mitigate bias, facilitating high-quality sample generation for improved downstream tasks.
- Tools Used: Python, PyTorch, Convolutional Neural Networks (CNNs).

Statistical Social Survey on Childcare Perceptions and Birth Intentions
- Conducted a social survey to study the impact of digital childcare facilities and childcare perceptions on the birth intentions of residents across districts in Hangzhou.
- Participated in sample design, questionnaire creation, and result analysis using Structural Equation Modeling (SEM), regression analysis, and ensemble learning to identify key influencing factors, with an emphasis on the interpretability of models and factors.
- Tools Used: R, Python, SEM, Regression Analysis, Ensemble Learning
- Awarded the university's second prize.

Awards & Honors

Semester Innovation Award, University	2024
Semester Social Practice Award, University	2023
Outstanding & Excellent Volunteer, National	2023
Second Prize, Statistics Research Competition, University	2023
Semester Sports Activity Award, University	2022
Third Prize, National College Students Mathematics Competition (Online Challenge)	2022
Fifth Place, University Basketball Annual Competition	May 2022
Member, University Orientation Team	Sept 2021 – 2022

Reviewer

IEEE International Symposium on Biomedical Imaging (ISBI 2025)
AAAI 2025 Workshop on Neural Machine Learning and Data (NeurMAD)