

Haiyu Wu

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RESEARCH INTERESTS

- Responsible AI: Ethnicity, Privacy, Safety.
- Generative AI: Richer and Diverse Content of Image Generation.
- Multi-modal Model: Text-to-Image.
- Transfer Learning: Fine-tuning strategies.

WORKING PAPER

[1] Vec2Face: Scaling Face Dataset Generation with Loosely Constrained Vectors. (Featured)

Haiyu Wu, Jaskirat Singh, Sicong Tian, Liang Zheng, and Kevin W. Bowyer.
arXiv 2024.

[2] Logical consistency and greater descriptive power for facial hair attribute learning. (Key Publication)

Haiyu Wu, Grace Bezold, Aman Bhatta, and Kevin W. Bowyer.
CVPR 2023.

[3] What is a Goldilocks Face Verification Test Set?

Haiyu Wu, Sicong Tian, Aman Bhatta, Jacob Gutierrez, Grace Bezold, Genesis Argueta, Karl Ricanek Jr, Michael C. King, and Kevin W. Bowyer.
arXiv 2024.

EDUCATION

Ph.D degree in Computer Engineering

University of Notre Dame, Notre Dame, IN
Advisor: Dr. Kevin W. Bowyer

Spring 2022 - Present

RECENT PUBLICATIONS

[1] What Should Be Balanced in a "Balanced" Face Recognition Dataset?

Haiyu Wu, and Kevin W. Bowyer.
BMVC 2023.

[2] Consistency and accuracy of celeba attribute values.

Haiyu Wu, Grace Bezold, Manuel Günther, Terrance Boulton, Michael C. King, and Kevin W. Bowyer.
VDU Workshop @ CVPR 2023.

[3] Face recognition accuracy across demographics: Shining a light into the problem.

Haiyu Wu, Vitor Albiero, K. S. Krishnapriya, Michael C. King, and Kevin W. Bowyer.
Biometrics Workshop @ CVPR 2023.

[4] Facial Hair Area in Face Recognition Across Demographics: Small Size, Big Effect.

Haiyu Wu, Sicong Tian, Aman Bhatta, Kağan Öztürk, Karl Ricanek, and Kevin W. Bowyer.
Biometrics Workshop @ WACV 2024.

[5] Analyzing the Impact of Demographic and Operational Variables on 1-to-Many Face ID Search.

Pangelinan, Gabriella, Aman Bhatta, Haiyu Wu, Michael C. King, and Kevin W. Bowyer.
IEEE TTS 2024.

[6] Can the accuracy bias by facial hairstyle be reduced through balancing the training data?

Ozturk, Kagan, Haiyu Wu, and Kevin W. Bowyer.
Biometrics Workshop @ CVPR 2024

[7] Our deep cnn face matchers have developed achromatopsia.

Bhatta, Aman, Domingo Mery, Haiyu Wu, Joyce Annan, Michael C. King, and Kevin W. Bowyer.
TCV Workshop @ CVPR 2024.

ARXIV PAPERS

[1] Identity Overlap Between Face Recognition Train/Test Data: Causing Optimistic Bias in Accuracy Measurement.

Haiyu Wu, Sicong Tian, Jacob Gutierrez, Aman Bhatta, Kağan Öztürk, and Kevin W. Bowyer.
arXiv 2024.

[2] LogicNet: A Logical Consistency Embedded Face Attribute Learning Network.

Haiyu Wu, Sicong Tian, Huayu Li, and Kevin W. Bowyer.
arXiv 2023.

[3] CRAFT: Contextual Re-Activation of Filters for face recognition Training.

Bhatta, Aman, Domingo Mery, Haiyu Wu, and Kevin W. Bowyer.
arXiv 2023.

[4] Beard segmentation and recognition bias.

Ozturk, Kagan, Grace Bezold, Aman Bhatta, Haiyu Wu, and Kevin Bowyer.
arXiv 2023.

BEST PAPER AWARD

Consistency and Accuracy of CelebA Attribute Values

VDU workshop @ CVPR2023

TALKS

Facial Hair Area in Face Recognition across Demographics

Biometrics Workshop @ WACV2024

Face Recognition Accuracy across Demographics

Biometrics Workshop @ CVPR2023

Consistency and Accuracy of CelebA Attribute Values

VDU workshop @ CVPR2023

SKILLS

Models

CLIP, Transformer, Diffusion model, Masked autoencoder

Knowledge

Deep Learning, Lora Fine-tuning, RLHF, DPO, SPO

Hardware

Arduino, Raspberry Pi

REVIEWS

AAAI2025, WACV2025, CVPR2024, ECCV2024, PRLETTERS, WACV2024, IJCB2023, IJCB2024, F&G2024, ICPR2022