

HAONAN BAI(白浩男)

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EDUCATION

The Chinese University of Hong Kong, Hong Kong, China September 2021 – Present

- *B.Eng.* in Artificial Intelligence - Systems and Technologies (AIST)
- Selected Courseworks: Database Systems, Cyber Security, Applied Deep Learning, Machine Learning, Operating Systems, Building Web Applications, Data Structures.
- Enrolled in [ELITE Stream](#)

University of Massachusetts Amherst, MA, US September 2024 – December, 2024

- Exchange student, majoring in Electrical and Computer Engineering.
- Selected Courseworks: Signal Processing Methods, Fundamentals of Electrical Engineering, Complex Variables.

University of California, Berkeley, CA, US June – August, 2022

- Summer Session Student
- Selected Courseworks: Computer Architecture, Artificial Intelligence

WORK EXPERIENCE

Data Scientist Internship December 2023 – January 2024

SmartAge Intelligence Limited Supervisor - OR Yu Chung

- **Data retrieval and analysis**
 - Designed and implemented a python script to retrieve motion data from IoT devices placing in the elderly's residence, and update the data regularly to the database.
 - Designed an algorithm to consistently analysis the elderly's living pattern, provide routine reports, and alert the family members when the elderly is in abnormal status.
- **IoT device development**
 - Use low-cost IoT components to develop devices instead of using expensive commercial products.
 - Prototypes include passive infrared sensors(PIR) and radar distance sensors.

Student Helper March – June 2023

CUHK Business School Supervisor - [Prof. Chunmei Zhu](#)

- **Data crawling**
 - Designed and implemented a web crawler with Python to collect PDFs from a database that is hard to crawl.

RESEARCH EXPERIENCE

Summer Research Internship May 2023 – September 2023

Department of Computer Science and Engineering Advisor - [Prof. Michael R. Lyu](#)

- **BiasPainter: Fairness Analysis of AI Image Generators** Publication 1|[Awards and Grants](#)
 - Proposed BiasPainter, a metamorphic testing framework that can accurately, automatically and comprehensively trigger social bias in image generation models.
 - Built an image dataset and a prompt dataset based on publicly accessible data sources, and designed a set of metamorphic relations to evaluate the bias of image generation models.
 - Evaluated the bias of mainstream image generation models, including commercial models like Stable Diffusion XL and MidJourney.

Research Assistant

September 2022 – February 2023

Department of Computer Science and Engineering Advisor - [Wenxuan Wang](#)

- **Bias Evaluation on Open-domain Question Answering Systems**

Publication [2](#)

- Conducted experiments on triggering bias in question answering (QA) systems.
- Designed a standardized algorithm to evaluate the bias of different QA models.

Research Assistant

February – August 2022

Department of Computer Science and Engineering Advisor - [Prof. Qi Dou](#)

- **Robotic Surgery Intelligence**

- Studied applications of deep learning in medical image analysis.
- Annotated robot-assisted prostatectomy photos for training purpose.

PUBLICATIONS

1. Wenxuan Wang, **Haonan Bai**, Jen-tse Huang, Yuxuan Wan, Youliang Yuan, Haoyi Qiu, Nanyun Peng, Michael R. Lyu, “[New Job, New Gender? Measuring the Social Bias in Image Generation Models](#)”, [\[Oral 174/4385 3.97%\]](#) ACMMM 2024.
2. Yuxuan Wan, Wenxuan Wang, Pinjia He, Jiazhen Gu, **Haonan Bai**, Michael Lyu, “[BiasAsker: Measuring the Bias in Conversational AI System](#)”, ESEC/FSE 2023.

AWARDS AND GRANTS

Student Activities Fund 2023-2024, Term 1

January 2024

- Granted for visiting the ESEC/FSE 2023 Conference as the paper presenter.

Best Project Award for the Undergraduate Summer Research Internship 2023

September 2023

- Awarded for the project *BiasPainter: Fairness Analysis of AI Image Generators*
- 5 awardees among 58 participants. The only awardee under AIST major

Find a Learning Opportunity Yourself (FLY) Award

June 2022

- Awarded for participating in self-initiated learning abroad programmes

CUHK Scholarship for Remarkable Endeavour for Admission

December 2021

- Up to 10 awardees annually, irrespective of the admission channel and residency

SKILLS

- Platform: Windows, Linux
- Programming Languages: Python, C/C++, Java, JavaScript
- Frameworks: TensorFlow, PyTorch (Machine Learning); React, Node.js (Web Development)
- Languages: English - Fluent, Mandarin - Native, German - Basic