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 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 Sciense and Engineering Advisor - Prof. Michael R. Lyu

- **Metamorphic Testing for Social Bias in Image Generation Models**   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 Sciense 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"
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