This personal statement tries to explain where I am right now, intellectually: why I want to pursue my PhD; what research I have done in the past; what topics I am interested in and I'm trying to work through in present; as well as why I am applying to UWM

Pragmatically speaking, do a PhD is the main pathway when I pursue my career in academia, a realm I prefer the academic freedom to work on things which aren't immediately useful for industry, where allows me to meet many smart and ambitious individuals, from whom I can draw great inspiration.

I focused on the research of behavioral economics in UG period. Regular fieldwork experiment is the typical method for our research, during which I have developed a data visualization Dashboard[1] to showcase one of our investigation results. After my undergraduate study in economic and management, I switched majors to Information Systems due to my desire to study a more multidisciplinary set of problems. In PG study, I was introduced to the field of crowdfunding effected by Raymond and became captivated by AI due to its generality not only limited to business, but with more connection to fields, for example, security, healthcare and communication. To gain more experience in this field, I joined SenseTime as an intern, working at smart medical groups and promoting the SenseCare-PatientAssist systems. Combined, these experiences provided me with rigorous training in mixed-methods research and serendipitously led to my current work at HKBU where I was responsible for tutorials on machine learning and time series analysis for undergraduates.

I 'd especially like to thank Juhee ,Christy and Janice for their help and insight, for sharing me experience about their PhD journey, for introducing me to some fantastic topics. Broadly, my current research lies in healthcare security, equity, online trust, social media, and crowdfunding. Concretely, the expected research space can be divided into three routes.

Route1: I 'd like to find ways of improving the security and equity of sociotechnical systems.

Inspired by Juhee's research [1]about the data breaches in multihospital systems and the internship of smart medical upgrading I participated, I realized a big gap between the high-quality data needs of AI for science and the limited access to personal health data. In addition to some poor human-AI interaction design and barriers to health care subsidies that make people reluctant to adopt digital health, security and equity factors may be overlooked because, according to our market research, people are particularly concerned about anonymous fraud and toxic bias caused by biodata breaches. These flaws have also been extensively highlighted by researchers during the investigation of generative AI [2].

Similarly, group discrimination also exists in crowdfunding platform caused directly by humans instead of the data. For example, I have done a comprehensive examination in my course project to clarify the contribution of explicit and implicit signals to crowdfunding projects, and the additional findings prove that state discrimination indeed exists in online crowdfunding communities in the United States. Although technologies such as privacy computing and synthetic data are making efforts to avoid these issues, I believe human-centered computing has a greater imagination in balancing security and innovation.

Route2: I'm highly interested in sociolinguistic ideas, in other words, how to understand and facilitate our expression in a computational ways based on the sound e-environment and thus animate online communities.

In my proposal, I draw an cursory and immature map about the human language in the application of online trust. This proposal takes online trust in crowdfunding as the object, proposes a new definition based on Aristotle's rhetoric theory and a quantitate measurement corresponding to the definition, aiming to provide another way of thinking about trust in crowdfunding platforms. I also tried some methods of natural language understanding to facilitate conversations. Another work [3]I independently completed and submitted the full version to the Journal of IEEE Transactions on Multimedia is an interpretable multimodal

[1] Please copy this link to search engine if the click does not work. http://jscv.njau.edu.cn/#/data/visualization

language reasoning algorithm, it is the first open-sourced multimodal methods toward crowdfunding and achieved the SOTA performance, which can help us gain a better business understanding for different modality language.

A slight difference with **Route1** is that **Route2** normally deals with aspects involving human language or social interactions, with a focus on Computational approach, but both routes aim to discover and explain meaningful social phenomena like security, equity and trust, especially within the online community, rather than a pursuing for few seconds improvement in algorithms.

Route3: other soft and feasible topics that are waiting to be unlocked…

Perhaps the research statement above has not resonated with you, and I must also admit that these ideas face significant methodological challenges. But that's **where it's interesting and the PhD-worthy.**

A word about the CS program. I choose it because I felt it would be a great place to cultivate my research objectives and tackle the accompanying challenges. There are cool and warm-hearted scholars like Dr. Zeng, who have done amazing and meaningful works in the fields of security, equitable computing and cs education, which I believe will help me locate myself more precisely within this extensive field.

References:

[1] Tanriverdi, Huseyin, Juhee Kwon, and Ghiyoung Im. "Data breaches in multihospital systems: antecedents and mitigation mechanisms." (2020).

[2] Nasr, Milad, et al. "Scalable extraction of training data from (production) language models." *arXiv preprint arXiv:2311.17035* (2023).

[3] **Zijian Zhang.** "A Four-Modality Fusion Method Of Crowdfunding Prediction." Under review by IEEE Transactions on Multimedia (2023).