Personal Statement

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The years 2021-2022 have been extraordinary, with the COVID-19 pandemic making for a magical and torturous two years for most people. Through this worldwide pandemic, it made me aware of the current shortage of healthcare systems and the increasing importance people are placing on their health. Having spent a year in Ireland and a year in the UK, I realised the fragility of the healthcare system in the face of a sudden pandemic and the exhaustion of doctors and healthcare workers, which led me to want to contribute to the healthcare field through technology. The undergraduate project I completed in Ireland was an intelligent algorithmic system that provides feedback on body-related health information provided by users. The aim is to provide targeted feedback about the user's health condition by judging the information provided by the user. At the time, my understanding of AI was not yet profound, but after completing my master's thesis, I realized that current AI technologies could still create more possibilities for the medical field. This led me to explore the possibility of applying multimodal analysis and recognition to actual medical diagnosis, thus promoting the interdisciplinary integration of AI and medicine. My vision is to provide more convenient access to patients in areas where there is a shortage of medical care.

During my undergraduate studies, I was exposed to the principles of computer composition and the skills needed to develop software. I am a person who is very interested in health care and computers. Especially after the initial COVID explosion, I felt that people would be more and more concerned about their own health in the future, so I developed a health management system as a practical exploration of the promising future healthcare market in my undergraduate studies. In the system developed, users can provide, track and record their own body data, while the system determines if there is a potentially relevant disease problem based on the combined information. At the time, the program incorporated algorithms for the identification of several specific diseases. Now that I think about it, perhaps there are more powerful deep learning algorithms that could help me refine the system. In the meantime, during two summer vacations, I undertook an internship at the Taicang branch of the Institute of Information Technology of China Science and Technology. At that time, my research focused on Bubble Wrap Medication recognition, how to detect various defective features and ensure efficiency under different environmental influences. At the same time, I was able to follow the team on a field trip and learn about the selection of projects, the construction, tuning and testing of production environments in an industrial process. This valuable experience has given me a clear understanding of how industry explores promising products and adopts algorithms for development.

At Master's level, I explored the field of artificial intelligence based on my desire to refine the algorithms of the systems I had previously developed. I am grateful to my lecturers for answering questions as I explored cutting-edge technologies and for giving me an insight into the huge potential behind artificial intelligence. For my Masters research project, I have chosen SemEval2022-Task 5: Multimedia Automatic Misogyny Identification (MAMI), a competition to explore the identification of misogynistic memes in social media. I also want to contribute to the reduction of racial and gender discrimination in the future through my research. By fusing Bert and Vit based on the Transformer architecture and fine-tuning the model for misogynistic memes at a later stage, I was able to identify memes through a multimodal model. Through this Masters research project, I realised the powerful use of multimodal models in identifying multimodal data. It therefore occurred to me that its application to the medical field, whether to assist doctors in diagnosis or to provide basic medical advice and pre-medical consultation services, would be promising and provide a more convenient access to medical care for people in areas with less developed medical resources. This is where I want to make my own contribution to the development of human health.

Therefore, I would like to continue to explore more applications and research on deep learning in this field to equip me with deeper and more specialised skills to contribute to the future integration of the computer and medical fields.