APPLICATION FORM

Name of applicant and contact details

Forename: Thi Minh Anh	Middle name(s):	Surname: Pham
Maiden name/other name:	Gender: Female	Date of Birth (dd/mm/yyyy): 15/01/1997
Contact Phone Number: 07784788014	Email Address: ph.minhanh197@gmail.com	
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Residency status

Nationality:	Vietnam
Country of birth:	Vietnam
Country of permanent residence:	Vietnam
On what date did you take up residence there? If since birth, please state:	18/09/2022
Have you been resident in the UK for the past 3 years?	Yes

Please give below details and the exact dates of any non-holiday periods spent away from your country of permanent residence. If for employment, please state if fixed-term contract.

Dates	Location	Reason
18/09/2022	United Kingdom	Master Programme
16/07/2018	Thailand	Exchange Study

Qualifications

Please supply details of Higher Education qualifications obtained

Qualification(s)	**Class of award (ie merit, pass, 2:1)**	**Awarding institution**	**Year of award**
Master of Science	1st class	Queen Mary University of London	2023
Bachelor of Science	1st class	FPT University	2020

Professional Experience that is *relevant* to this application

Employer/Organisation (including location)	**Status and responsibilities**
Oxford Digital Medicine Research Group, Oxford, UK	Research Assítant - Ongoing • Interpreting ICU dataset for Acute respiratory distress syndrome (ARDS) patients, mitigating data imbalance for training Explainable Machine Learning Models. • Developing Interpretable Statistical Models (Random Forest, SVM, Gradient Boosting) for predicting the length of ICU stay and changing treatment methods in ARDS patients.

Queen Mary Computer Vision Research Group, London, UK	Research Intern – 5 months • Proposed a new soft prompt learning method to enhance the generalization of Large Vision Language Models using a reparameterization prompt encoder. • Improved Stable Diffusion for generating high-quality fashion images by adding Simulation-Inversion and Perceptual loss functions that optimize the model to better match fine details in the text prompts. • Reviewed and Evaluated Class Activation Maps in context to image classification in the wild.
FPT Artificial Intelligence R&D Center, Vietnam	Machine Learning Engineer – 1 year • Built a Face Mask and Social Distancing Detector system during Covid-19 pandemic by fine-tuning multi-scale YOLO-v3, SSD, and Faster-RCNN through transfer learning, and LBPH & Haar Cascade for face recognition. • Cooperated with Samsung Data Intelligence to leverage customer reviews for optimizing market-based ads.

Relevant skills and experience

Please provide further relevant information about yourself such as skills that you have developed and details of work experience, industrial/research placements, and community activities that you believe are relevant to your application to undertake a PhD. **(maximum of 200 words)**
My expertise lies in machine learning for image analysis and handling clinical datasets, cultivated through comprehensive training and project engagement. Proficient in image analysis and deep learning, I have successfully developed a new soft prompt learning in multimodal models and works extensively in different deep learning models (GANs, Gen AI, YOLO) for various vision tasks. During my time at the Digital Medicine Research Group, I have demonstrated a commitment to advancing machine learning models to support the changing treatment in patients with lung's disease. Pursuing a PhD in applying machine learning to healthcare domain aligns with my passion to address complex medical challenges by leveraging innovative technologies. I am driven to contribute impactful solutions, bridging the gap between imaging modalities for more accurate and comprehensive medical assessments. This doctoral journey represents my dedication to pushing the boundaries of medical vision applications and contributing meaningfully to the intersection of technology and healthcare.

Research interests and case for support (all applicants)

Please indicate the title of the project and lead supervisor details you are applying for as well as the host institution:	
Project title and lead supervisor	*Optimising patient selection for Deep Brain Stimulation in Parkinson's disease using multimodal machine learning – Professor Mark Humphries University of Nottingham*
Case for support **(maximum of 250 words)** Please provide a statement describing your research experiences to date and how this is relevant to the research project that you are applying for.	
My research experiences have primarily focused on machine learning, computer vision and data analysis to medical contexts. This positions me effectively to make a meaningful contribution to the project on optimizing patient selection for Deep Brain Stimulation (DBS) in Parkinson's disease. During my time at the Digital Medicine Research Group, I refined my abilities in interpreting extensive clinical datasets on patient symptoms and ICU events, addressing data imbalances, and developing statistical models for predicting the most appropriate treatment method. Moreover, my stint at the Computer Vision Research Group allowed me to delve deeply into multimodal machine learning models and proposed a novel soft prompt learning method to enhance the generalization of	

these models in specific domains. The prospect of applying and refining this prompt tuning technique in the healthcare domain, especially in the context of fMRI neuroimaging and video capture of movements, is particularly inspiring.

I am excited about the opportunity of merging clinical data, neuroimaging and leveraging multimodal machine learning techniques to optimize patient selection for DBS, and I am confident that my expertise in multimodal models, data analysis, and my commitment to impactful research will be valuable contributions to the collaborative efforts with MachineMedicine and St George's Hospital. The training and exposure offered by this project align perfectly with my career aspirations, and I am eager to contribute my skills and experience to ultimately support Parkinson's patients in achieving positive outcomes.

Benefit of participation in the Doctoral Training Partnership

Please describe how you think you would benefit from being recruited to the DTP, and what you would contribute to the community of DTP students and to the wider community (for example, academia, industry and the general public). **(maximum of 200 words)**

Joining the Doctoral Training Partnership (DTP) would be a transformative opportunity for me. The collaborative and interdisciplinary nature of the DTP fosters an environment where I can engage with peers across various research domains, expanding my knowledge beyond my current expertise in machine learning and computer vision. Exposure to diverse perspectives and methodologies within the DTP community would enrich my research approach and provide a holistic understanding of complex challenges.

In turn, I bring a unique blend of skills in machine learning, data science, and a keen eagersness for impactful research to society. My experiences in interpreting medical datasets for the Digital Medicine Research Group and developing novel approaches for Multimodal Vision-Language Models align well with the multidisciplinary ethos of the DTP. I am eager to contribute my skills to collaborative projects, enhance cross-disciplinary dialogue, and actively participate in knowledge exchange.

Beyond the immediate academic community, I am committed to translating research outcomes into real-world applications, bridging the gap between academia and industry. My goal is to contribute not only to advancements within the DTP but also to broader societal challenges, promoting the meaningful application of research for the benefit of the general public.

How did you find out about the DTP?

MRC AIM website	☐
University website	☐
Academic tutor	☐
Findaphd.com	☒
Twitter	☐
LinkedIn	☐
Other	☐
If other, please provide details:	