Siyi **Du**

PhD Student · Imperial College London

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Summary

Current PhD student at BioMedIA lab, Imperial College London. 7+ years experience specializing in the deep learning, computer vision, and medical imaging. Super nerd who loves Linux, Python and PyTorch and enjoys to code novel algorithms. Interested in devising a better problem-solving method for challenging tasks, and learning new technologies and tools if the need arises.

Internship

Lenovo *Beijing, China*

Summer Research Intern *Jul. 2023 - Sep. 2023*

- Designed a novel visual-aware large language model for sequential recommendation.
- Devised a multi-task pre-training strategy to learn visual features that include user preference and are understandable to the large language model (LLM) and a instruction tuning method for parameter-efficient fine-tuning.
- Deployed the algorithm on Llama (a kind of LLMs) and trained it using the Amazon Product dataset.
- Wrote and published a patent in China

Cognitive Robotics and AI Lab, Kent State university *Kent, US*

Summer Research Intern *March. 2020 - Oct. 2020*

- Designed a novel encoder based on self-supervised learning to capture the high dimensional representation of objects' features related to similar physics laws in both old and new environments.
- Devised a policy decision module to generate action sequences based on representations extracted by the encoder
- Implemented the whole model using Python and PyTorch.

Education

IC(Imperial College London) *London, UK*

Ph.D. in Electrical and Electronic Engineering *Oct. 2023 - Current*

- Got a Full PhD Scholarship which include tuition fees (3 years) and stipend (3.5 years).

UBC(University of British Columbia) *Vancouver, BC, Canada*

M.A.Sc. in Electrical and Computer Engineering *Sep. 2021 - Sep. 2023*

- Thesis: Deep Learning for Dermatology : Contributions in Model Fairness, Multi-domain Adaptation, and Light-weight Efficiency.
- GPA: 94%.
- Got a Research Assistant Scholarship for two years (21,000 CAD/ year).

Beihang University *Beijing, China*

B.E. in Automation Science (Patten Recognition direction) *Sep. 2017 - July. 2021*

- GPA: 3.83/4.0 (Ranking: Top 5)

Publications

Conference

– **Du, S.**, Shaoming, Z., Yinsong, W., Wenjia, B., Declan, P. O., Chen, Q. (2024). TIP: Tabular-image pre-training for multimodal classification with incomplete data. In *European Conference on Computer Vision* ***(ECCV 2024)***.

– **Du, S.**, Bayasi, N., Hamarneh, G., and Garbi, R. (2023). AViT: Adapting vision transformers for small skin lesion segmentation datasets. In *International Conference on Medical Image Computing and Computer-Assisted Intervention* ***(MICCAI 2023) ISIC Workshop*** **(best paper)**.

– Bayasi, N., **Du, S.**, Hamarneh, G., and Garbi, R. (2023). Continual-GEN: Continual group ensembling for domain-agnostic skin lesion classification. In *International Conference on Medical Image Computing and Computer-Assisted Intervention* ***(MICCAI 2023) ISIC Workshop***.

– **Du, S.**, Bayasi, N., Hamarneh, G., and Garbi, R. (2023). MDViT: Multi-domain vision transformer for small medical image segmentation datasets. In *International Conference on Medical Image Computing and Computer-Assisted Intervention* ***(MICCAI 2023)***.

– **Du, S.**, Hers, B., Bayasi, N., Hamarneh, G., and Garbi, R. (2022). FairDisCo: Fairer AI in dermatology via disentanglement contrastive learning. In *European Conference on Computer Vision* ***(ECCV 2022) ISIC Workshop*** **(best paper)**.

– Jiang, X., **Du, S.**, Qin, Z., Sun, Y., and Yu, J. (2020). KBGN: Knowledge-bridge graph network for adaptive vision-text reasoning in visual dialogue. In *Proceedings of the 28th ACM international conference on multimedia* ***(ACMMM 2020)*** **(oral)**.

Honors & Awards

2023	**Best Paper Award**, 8th ISIC Skin Image Analysis Workshop @ MICCAI 2023	*Canada*
2023	**PhD Full Scholarship**, Imperial College London	*UK*
2023	**Graduate Support Initiative (GSI) Award**, UBC	*Canada*
2022	**Best Paper Award**, 7th ISIC Skin Image Analysis Workshop @ ECCV 2022	*Israel*
2021-23	**Research Assistant Scholarship**, UBC	*Canada*
2021-23	**International Tuition Award**, UBC	*Canada*
2021	**Meritorious Winner**, Mathematical Contest in Modeling in USA	*USA*
2018	**1st Prize**, National Mathematics Competition for College Students	*China*
2018-20	**National Encouragement Scholarship**, Ministry of Education of the People's Republic of China	*China*
2018-19	**Outstanding Student Award**, Beihang University	*China*

Other Activities

2024	**Reviewer**, MICCAI 2024	*UK*
2023-24	**Program Committee & Reviewer**, 8-9th ISIC Skin Image Analysis Workshop @ MICCAI 2023-24	*Canada, UK*
2024	**Teaching Assistant**, Computer Vision and Pattern Recognition, IC	*UK*
2018-19	**Teaching Assistant**, Medical Imaging, UBC	*Canada*
2022-23	**Teaching Assistant**, Engineering Graphics, Beihang University	*China*

Computer Skills

OS	MAC, Window, Linux
Deep Learning	PyTorch, TensorFlow
Software Programming	Python, MATLAB, C, Assembly Language
Hardware Programming	SolidWorks, AutoCAD, Verilog HDL