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Department of Electrical and Electronic Engineering
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Imperial College London
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Education

- 2023-on **Ph.D. in Electrical and Electronic Engineering**
Imperial College London (IC), London, UK | Supervisor: Dr. Chen Qin
• Receive a Full PhD Scholarship
- 2021-2023 **M.A.Sc. in Electrical and Computer Engineering**
University of British Columbia (UBC), Vancouver, BC, Canada | Supervisor: Prof. Rafeef Garbi
• Thesis: Deep Learning for Dermatology : Contributions in Model Fairness, Multi-domain Adaptation, and Light-weight Efficiency | GPA: 94%
• Receive a Graduate Research Assistantship for two years
- 2017-2021 **B.E. in Automation Science (Pattern Recognition direction)** | Supervisor: Prof. Zengchang Qin
Beihang University, Beijing, China
• GPA: 3.83/4.0 (Ranking: Top 5)

Internship

- 2023-2023 **Lenovo**
Summer Research Intern (Jul-Sep), Beijing, China
• Designed a novel visual-aware large language model (LLM) for sequential recommendation.
• Devised a multi-task pre-training strategy to learn visual features that include user preference and are understandable to LLMs 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.
- 2020-2020 **Cognitive Robotics and AI Lab, Kent State university**
Summer Research Intern (Mar-Oct), Kent, US
• 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.

Selected Publications

Conference

- 2024 TIP: Tabular-image pre-training for multimodal classification with incomplete data
Du, S.; Zheng, S., Wang, Y., Bai, W., O'Regan, D. P., and Qin, C.. *European Conference on Computer Vision (ECCV)*.
- 2024 CAR: Contrast-agnostic deformable medical image registration with contrast-invariant latent regularization
Wang, Y., **Du, S.**, Zheng, S., Luo, X., and Qin, C.. *International Conference on Medical Image Computing and Computer Assisted Intervention (MICCAI) WBIR Workshop*.
- 2024 SGSR: Structure-guided multi-contrast MRI super-resolution via spatio-frequency co-query attention
Zheng, S., Wang, Y., **Du, S.**, and Qin, C.. *International Conference on Medical Image Computing and Computer Assisted Intervention (MICCAI) MLMI Workshop*.
- 2023 MDViT: Multi-domain vision transformer for small medical image segmentation datasets
Du, S., Bayasi, N., Hamarneh, G., and Garbi, R.. *International Conference on Medical Image Computing and Computer-Assisted Intervention (MICCAI)*.
- 2023 AViT: Adapting vision transformers for small skin lesion segmentation datasets
Du, S., Bayasi, N., Hamarneh, G., and Garbi, R.. *International Conference on Medical Image Computing and Computer-Assisted Intervention (MICCAI) ISIC Workshop*. **[Best Paper Award]**

- 2023 Continual-GEN: Continual group ensembling for domain-agnostic skin lesion classification
Bayasi, N., **Du, S.**, Hamarneh, G., and Garbi, R.. *International Conference on Medical Image Computing and Computer-Assisted Intervention (MICCAI) ISIC Workshop*.
- 2022 FairDisCo: Fairer AI in dermatology via disentanglement contrastive learning
Du, S., Hers, B., Bayasi, N., Hamarneh, G., and Garbi, R.. *European Conference on Computer Vision (ECCV) ISIC Workshop*. **[Best Paper Award]**
- 2020 KBGN: Knowledge-bridge graph network for adaptive vision-text reasoning in visual dialogue.
Jiang, X., **Du, S.**, Qin, Z., Sun, Y., and Yu, J.. *28th ACM International Conference on Multimedia (ACM MM)*. **[Oral]**

Honors and Awards

- 2023 **Best Paper Award**, 8th ISIC Skin Image Analysis Workshop @MICCAI Conference
- 2023–2027 **PhD Full Scholarship**, IC, UK
- 2023 **Graduate Support Initiative (GSI) Award**, UBC, Canada
- 2022 **Best Paper Award**, 7th ISIC Skin Image Analysis Workshop @ECCV Conference
- 2021–2023 **Research Assistant Scholarship**, UBC, Canada
- 2021–2023 **International Tuition Award**, UBC, Canada
- 2021 **Meritorious Winner**, Mathematical Contest in Modeling in USA
- 2018 **1st Prize**, National Mathematics Competition for College Students, China
- 2018–2020 **National Encouragement Scholarship**, Ministry of Education of the People's Republic of China
- 2018–2019 **Outstanding Student Award**, Beihang University, China

Other Activities

- 2024 **Reviewer**, MICCAI Conference
- 2024 **Teaching Assistant**, Computer Vision and Pattern Recognition Course, IC, UK
- 2023–2024 **Program Committee & Reviewer**, ISIC Skin Image Analysis Workshop @MICCAI Conference
- 2022–2023 **Teaching Assistant**, Medical Image Course, UBC, Canada
- 2018–2019 **Teaching Assistant**, Engineering Graphics, Beihang University, China

Technical Skills

Machine Learning

- Pytorch
- Tensorflow
- Scikit-learn

Software Programming

- Python
- MATLAB
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Hardware Programming

- SolidWorks
 - AutoCAD
 - Verilog HDL
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