Yuyang Xue, Ph.D. Student

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Education

03/2022 – Now **Ph.D. Student Engineering**, *University of Edinburgh*.
Research Direction: *Machine Unlearning, Vision Language Models, Generative Models, MRI Reconstructions.*

10/2017 – 10/2018 **M.Sc. Computer Science**, *University of Southampton*, with **Distinction**.
Dissertation: *Machine learning based Automatic Whitecap Extraction*.

09/2012 – 06/2016 **B.Sc. Computer Science**, *Fuzhou University*
Dissertation: *Machine learning based retargeting image quality assessment*.

Research Publications

As of the end of 2024, I have published a total of **12** conference papers and **12** journal articles. For detailed information, please refer to my Google Scholar page. Here, only a selection is provided to fit the page.

Selected Conference Proceedings

1. **Y. Xue**, J. Liu, S. McDonagh, and S. A. Tsaftaris, "Erase to enhance: Data-efficient machine unlearning in mri reconstruction," in *Medical Imaging with Deep Learning 2024*, 2024.
2. **Y. Xue**, C. Qin, and S. A. Tsaftaris, "Inference stage denoising for undersampled mri reconstruction," in *2024 IEEE International Symposium on Biomedical Imaging (ISBI)*, 2024, pp. 1–5.
3. **Y. Xue**, J. Yan, R. Dutt, *et al.*, "Bmft: Achieving fairness via bias-based weight masking fine-tuning," in *MICCAI Workshop on Fairness of AI in Medical Imaging*, Springer, 2024, pp. 98–108.
4. **Y. Xue**, Y. Du, G. Carloni, E. Pachetti, C. Jordan, and S. A. Tsaftaris, "Cine cardiac mri reconstruction using a convolutional recurrent network with refinement," in *International Workshop on Statistical Atlases and Computational Models of the Heart*, Springer, 2023, pp. 421–432.
5. **Y. Xue** and J. Su, "Attention based image compression post-processing convlutional neural network.," in *CVPR Workshops*, 2019.

Selected Journal Articles

1. Y. Zhou, **Y. Xue**, J. Bi, *et al.*, "Toward real world stereo image super-resolution via hybrid degradation model and discriminator for implied stereo image information," *Expert Systems with Applications*, p. 124 457, 2024.
2. J. Zhang, Y. Zhou, **Y. Xue**, *et al.*, "Kespksr: A blind image super-resolution network combined kernel estimation and structural prior knowledge," 2023.
3. **Y. Xue**, X. Ye, L. Wei, X. Zhang, T. Sakurai, and L. Wei, "Better performance with transformer: Cppformer in the precise prediction of cell-penetrating peptides," *Current Medicinal Chemistry*, vol. 29, no. 5, pp. 881–893, 2022.
4. L. Wei, X. Ye, **Y. Xue**, T. Sakurai, and L. Wei, "Atse: A peptide toxicity predictor by exploiting structural and evolutionary information based on graph neural network and attention mechanism," *Briefings in Bioinformatics*, vol. 22, no. 5, bbab041, 2021.
5. L. Wu, **Y. Xue**, T. Tong, M. Du, and Q. Gao, "Image colorization algorithm based on foreground semantic information," *Journal of Computer Applications*, vol. 41, no. 7, p. 2048, 2021.

Academic Experience

04/2020 – 02/2022 **Remote Learning**, *University of Tsukuba,* Ikibrar, Japan.
Research Direction: *Bioinformatics.*

08/2020 – 06/2020 **Visiting Scholar,** *Shandong University,* Shandong, China.
Research Direction: *Bioinformatics and Peptide toxicity prediction.*

Speech

10/2024 **Achieving Fairness via Bias-based Weight Masking Fine-tuning**, *Oral presenter*, MICCAI FAIMI, Morocco

07/2024 **Erase to Enhance: Machine Unlearning**, *Invited Speaker*, University of Glasgow, UK

05/2024 **DIMEDIA: diffusion models in medical imaging and analysis**, *Main Speaker*, ISBI Tutorial, Greece

Teaching Experience

2023 – Now **Machine Learning in Signal Processing**, *TA leader*, University of Edinburgh

Professional Services

Reviewer **CVPR, MICCAI, ECCV, ISBI, ICLR, MedAI, TMI**, etc.

Employment History

11/2018 – 02/2020 **Deep Learning Engineer,** *Imperial Vision,* Fujian, China.
Responsibility: *Research and optimize colorization and segmentation algorithm.*

04/2016 – 06/2017 **Server-side Game Developer,** *NetDragon Websoft Inc,* Fujian, China.

Patents

CN109712203B **Image coloring method for generating antagonistic network based on self-attention,** *Y.Xue*, G. Li, T. Tong, Q. Gao, 2020

CN110634170B **Photo-level image generation method based on semantic content and rapid image retrieval,** *Y. Xue*, J. Pu, Y. Xue, G. Li, T. Tong, Q. Gao, 2020

Skills

Languages Strong in English and Mandarin Chinese, familiar with Japanese.

Coding Python, Matlab, Rust, C/C++, JAVASCRIPT, TYPESCRIPT, LaTeX, …

Software Docker, Kubenate, Gitlab, HPC maintainance, Linux administration, …

DL Framework PyTorch, Keras, Tensorflow, Lightning, …

Misc. Academic research, teaching, training, …

Miscellaneous Experience

Awards and Achievements

2022 **Fulltime Scholarship**, School of Engineering, University of Edinburgh

2019 **5th Place**, CVPR 2019 Learned Image Compression Challenge.

Certification

2015 **Chinese National intermediate software engineer certificate** . Awarded by MIIT, China.