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Yuyang Xue

PhD Candidate, Engineering

My LinkedIn

Highly Driven PhD Candidate on Medical Imaging and Uncertainty
Former Computer Vision and Deep Learning Engineer with 3 years of work experience.
Areas of Interest: Medical Imaging, Computer Vision, Deep Learning.

Education

PhD Candidate in Engineering University of Edinburgh **03/2022 — Now**
- PhD Proposal: **Towards Robust Deep-Learning-Based Magnetic Resonance Imaging Reconstruction**
- Supervised by *Dr. Chen Qin*

Master's Degree in Computer Science University of Southampton with **Distinction** **10/2017 — 10/2018**
- Machine Learning, Intelligent Agent, Computer Vision, Computer Science;
- Advanced Machine Learning, Biometrics, Open Data Innovation;
- Dissertation: **Machine learning based Automatic Whitecap Extraction**

Bachelor's Degree in Computer Engineering Fuzhou University Upper Second Class **09/2012 — 09/2016**
- Dissertation: **Machine learning based retargeting image quality assessment**

Publications

11 peer-reviewed publications. 4 (co-) first authors (denotes shared first authorship)*

1. **Y. Xue**, X. Ye, L. Wei, X. Zhang, T. Sakurai, L. Wei **Better Performance with Transformer CPPFormer in precise prediction of cell.** *Current Medical Chemistry* (2021)
2. **Y. Xue**, X. Ye, Y. Zhou, T. Sakurai, T. Tong **There is No Beauty without Color – Automatic Image Colorization Using Deep Learning: A Survey.** (2021) (Preprint)
3. *Y. Zhou**, **Y. Xue***, *D. Wei, R. Nie, Y. Lin, T. Tong,X. Ye, T. Sakurai, Q. Gao* **Deeper or Wider? An Investigation for Future Super-Resolution Neural Network.** *Transactions on Pattern Analysis and Machine Intelligence* (2021) (Reviewing)
4. **Y. Xue**, J. Su **Attention Based Image Compression Post-Processing Convolutional Neural Network.** *The IEEE Conference on Computer Vision and Pattern Recognition (CVPR) Workshops* (2019)
5. Y. Huang, **Y. Xue**, J. Lan, Y. Deng, G. Chen, H. Zhang, M. Dang, T. Tong **Deep Learning Framework for Detecting Positive Lymph Nodes of Gastric Cancer on Histopathological Images.** *2021 6th International Conference on Biomedical Imaging, Signal Processing* (2021)
6. *L. Wei, X. Ye,* **Y. Xue**, *T. Sakurai, L. Wei* **ATSE: a peptide toxicity predictor by exploiting structural and evolutionary information based on graph neural network and attention mechanism.** *Briefings in Bioinformatics* (2021)
7. *J. Lan, S. Cai,* **Y. Xue**, *Q. Gao, M. Du, H. Zhang, Z. Wu, Y. Deng, Y. Huang, T. Tong, G. Chen* **Unpaired Stain Style Transfer Using Invertible Neural Networks Based on Channel Attention and Long-Range Residual.** *IEEE Access* (2021)
8. *L. Guo, J. Xie,* **Y. Xue**, *R. Li, W. Zheng, T. Tong, Q. Gao* **GLNet: Low-light Image Enhancement via Grayscale Priors.** *International Conference on Signal Processing Systems (ICSPS)* (2021)
9. *R. Li, J. Xie,* **Y. Xue**, *W. Zou, T. Tong, M. Luo, Q. Gao* **Enhanced Multi-Stage Network for Defocus Deblurring using Dualpixel Images.** *International Conference on Signal Processing Systems (ICSPS)* (2021)
10. *S. Cai,* **Y. Xue**, *Q. Gao, M. Du, G. Chen, H. Zhang, T. Tong* **Stain Style Transfer Using Transitive Adversarial Networks.** *International Workshop on Machine Learning for Medical Image Reconstruction* (2019)
11. *Y. Niu, H. Zhang,* **Y. Xue** **Image Color Correction Database for Subjective Perceptual Consistency Assessment.** *Acta Electronica Sinica* (2017)

Awards & Honors

2022	University of Edinburgh, School of Engineering Studentship	**Full International Scholarship**
2019	CVPR 2019 LEARNED IMAGE COMPRESSION Workshop	**5th Place**
2018	Kaggle Toxic Comment Classification Challenge	**Bronze**

Academic Experience

Remote Learning **04/2020 — 02/2022**
University of Tsukuba Ikibara, Japan

- Advised by *Professor Xiucai Ye*
- Working on Computer Vision and Bioinformatics

Visiting Scholar **08/2020 — 12/2020**
Shandong University Shandong, China

- Advised by *Professor Leyi Wei*
- Working on peptide classification and crystal Model prediction

Industry Experience

Deep Learning Engineer **11/2018 — 02/2022**
Imperial Vision Fujian, Fuzhou

- Research and optimize computer vision algorithms;
  - Led and presided over the development of *The Magic Brush*, and designed the neural network architecture and user interface
  - Led the colorization work of old black and white photos, and extended it into video colorization
- Develop software and optimize performance
  - Development of portrait segmentation model in embedded conference system

Game Server Lead Programmer **04/2016 — 04/2017**
NetDragon Websoft Inc Fujian, China

- Game scripts programming
- Server interfaces packaging and maintenance;

Selected Industry Projects

Old Photos Colorization **2019 — 2022**

- A self-attention mechanism-based colorization technique is proposed to colorize the ancient documentary picture data. Traditional convolutional deep learning network has its own drawbacks like artifacts and a small receptive field.
- To solve this problem, the self-attention mechanism is implemented to generate different feature maps and fuses them together. In addition, progressive growing of GANs training strategy also brings much effective achievement.
- The relevant patent is submitted.
- `Demo Video:` `Roman Holiday Colorization` `Places of Interest` `The Great Wall` `Old Documentary`

Scenery Generation and foreground Retrieval **2019 — 2020**

- This project is inspired by NVIDIA's SPADE work. We use the pix2pix-based UNet structure with spatially-adaptive normalization to synthesize photo-realistic images by a semantic input. We use multi-scale training strategy to improve the high-definition generation quality. Users only need to draw a simple semantic input using prepared labels.
- As for the foreground, we use image retrieval with a lightweight recognition network to get the real objects by users' sketch and fuse them into synthesized background.
- This project was exhibited at the 2nd Digital China Summit
- `Demo:` `The Magic Brush` `Demo:` `The Magic Brush + Sketch`

Patents

- **Y. Xue**, G. Li, T. Tong, Q. Gao **A photo-level image generation method based on semantic content and fast image retrieval** CN109712203B (2020)
- **Y. Xue**, J. Pu, Y. Xue, G. Li, T. Tong, Q. Gao **Photo-level image generation method based on semantic content and rapid image retrieval** CN110634170A (2020)

Technical Skills

Programming	Python, Julia, Matlab, C/C++;
Frameworks	PyTorch, Keras, Tensorflow;
Language	Chinese, English, Japanese;
IELTS	Listening 8.5, Reading 9.0, Writing 6.0, Speaking 6.0, Overall 7.5 (2019).