Curriculum Vitae of Dr. Sen He

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🌐 https://senhe.github.io

Research Expertise

🔖 **Generative Models**
Conditional image synthesis and manipulation, e.g., layout to image generation, face manipulation and virtual try-on.
Fundamental of generative models, e.g., Variational Auto-Encoders, Normalizing Flows, Generative Adversarial Networks, Diffusion Models, Score-based models.

🔖 **Attention Models**
Bottom-up attention (e.g., image saliency); Top-down attention (e.g., soft-attention for image captioning); Contextual attention (e.g., self-attention in transformer).

🔖 **Few-Shot Learning**
Few-shot classification and segmentation.

Employment History

May, 2020 – Present
🔖 **Research Fellow**
Centre for Vision, Speech and Signal Processing at University of Surrey, UK.
Line Manager: Prof. Tao Xiang

Jun, 2019 – Sep, 2019
🔖 **Summer Internship**
Toshiba Cambridge Research Lab, Computer vision Group.
Mentors: Dr. Chao Zhang, Dr. Stephan Liwichi, and Prof. Roberto Cipolla

Education

Nov, 2016 – Apr, 2020
🔖 **Ph.D., University of Exeter**.
Attention in Computer Vision.
Supervisors: Dr. Nicolas Pugeault and Prof. Richard Everson

Sep, 2015 – Sep, 2016
🔖 **M.Sc, University of Edinburgh**.
Signal Processing and Communications.

Sep, 2011 – Jun, 2015
🔖 **B.Sc, Nanjing University of Posts and Telecommunications**.
Communication Engineering.

Research Publications

1 Yu, T., **He, Sen**, Song, Y.-Z., & Tao, X. (2022). Hybrid graph neural networks for few-shot learning. In *AAAI Conference on Artificial Intelligence (AAAI)*.

2 Han, X., **He, Sen**, Zhang, L., & Tao, X. (2021). Text-based person search with limited data. In *British Machine Vision Conference (BMVC)*.

3 **He, Sen**, Liao, W., Yang, M., Yongxin, Y., Yi-Zhe, S., Rosenhahn, B., & Tao, X. (2021). Context-aware layout to image generation with enhanced object appearance. In *Conference on Computer Vision and Pattern Recognition (CVPR)*.

4   **He, Sen**, Liao, W., Yang, M., Yi-Zhe, S., Rosenhahn, B., & Tao, X. (2021). Disentangled lifespan face synthesis. In *International Conference on Computer Vision (ICCV)*.

5   Lu, Z., **He Sen**, Zhu, X., Zhang, L., Yi-Zhe, S., & Tao, X. (2021). Simpler is better: Few-shot semantic segmentation with classifier weighttransformer. In *International Conference on Computer Vision (ICCV)*.

6   **He, Sen**, Liao, W., Tavakoli, H. R., Yang, M., Rosenhahn, B., & Pugeault, N. (2020). Image captioning through image transformer. In *Asian Conference on Computer Vision (ACCV)*.

7   Zhang, C., **He, Sen**, & Liwichi, S. (2020). A spherical approach to planar semantic segmentation. In *British Machine Vision Conference (BMVC)*.

8   **He, Sen**, Tavakoli, H. R., Borji, A., & Pugeault, N. (2019). Human attention in image captioning: Dataset and analysis. In *International Conference on Computer Vision (ICCV)*.

9   **He, Sen**, Tavakoli, H. R., Borji, A., Mi, Y., & Pugeault, N. (2019). Understanding and visualizing deep visual saliency models. In *Conference on Computer Vision and Pattern Recognition (CVPR)*.

Project Experience

EP/N035399/1, EPSRC research grant, Dec,2016–May,2018 (Co-Investigator)
Autonomous Driving with Emergent Visual Attention

Skills

Languages	Mandarin (mother language), English (fluent).
Coding	Python, C, Matlab, LaTeX, …
Machine learning framework	Pytorch, Tensorflow, Caffe, MatConvNet.
Web Dev	Html.

Academic Service

Conference and Journal Reviewer

2019-	CVPR, ICCV, BMVC
2021-	T-PAMI, T-MM

Teaching Assistant

Spring, 2017	ECCM1416, Computational Mathematics, University of Exeter.
Winter, 2018	ECM3423, Computer Graphics, University of Exeter.

Supervision

2020-2021	Student: Chinmay Sawant. Master graduation project, University of Surrey.