

Curriculum Vitae of Dr. Sen He

✉ sen.he@surrey.ac.uk
🌐 <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 Han, X., He, Sen, Zhang, L., & Tao, X. (2021). Text-based person search with limited data. In **British Machine Vision Conference (BMVC)**.
- 2 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)**.
- 3 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)**.

- 4 Lu, Z., **He, Sen**, Zhu, X., Zhang, L., Yi-Zhe, S., & Tao, X. (2021). Simpler is better: Few-shot semantic segmentation with classifier weight transformer. In *International Conference on Computer Vision (ICCV)*.
- 5 **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)*.
- 6 Zhang, C., **He, Sen**, & Liwichi, S. (2020). A spherical approach to planar semantic segmentation. In *British Machine Vision Conference (BMVC)*.
- 7 **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)*.
- 8 **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/No35399/1, EPSRC research grant, Dec,2016–May,2018 (Co-Investigator)
Autonomous Driving with Emergent Visual Attention

Skills



Languages	<ul style="list-style-type: none">  Mandarin (mother language), English (fluent).
Coding	<ul style="list-style-type: none">  Python, C, Matlab, \LaTeX, ...
Machine learning framework	<ul style="list-style-type: none">  Pytorch, Tensorflow, Caffe, MatConvNet.
Web Dev	<ul style="list-style-type: none">  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 supervision, University of Surrey.