Shuo Zhao

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EDUCATION

2022.05 – Present   **Leibniz-Institut für Analytische Wissenschaften – ISAS – e.V.**   **Ph.D. Student**

- **Supervisor:** Dr. Jianxu Chen

- **Research Field:** Analysis of microscopic biomedical images

- **Lab:** AMBIOM

2020.09 – 2021.10   **Harbin Institute of Technology, Harbin, P.R. China**   **Ph.D. Student**

- **Research Field:** Medical Engineering Cross Instrument

- **Lab:** Ultra-precision Opto-electronic Instrument Engineering Institute

- **Project:** Research on automatic rapid nucleic acid detection instrument

2017.09 – 2020.03   **Harbin Engineering University, Harbin, P. R. China**   **Master**

- **Research Field:** Computational Vision, Machine Learning, Deep Learning, Pedestrian Tracking

- **GPA:** 3.52/4.0 **(Top 10%)**

- **Lab:** Computer Vision and Audio Laboratory

- **Main Course:** Advanced Computer NetWork, Wireless Sensor Network, Computation Intelligence, Digital Signal Processing, Acquirement and Utilization of Information about Scientific Research, etc.

2012.09 – 2016.06   **Harbin Engineering University, Harbin, P. R. China**   **Bachelor**

- **Major:** Telecommunication Engineering

- **GPA:** 2.88/4.0

- **Main Course:** Higher Mathematics, Probability Theory & Mathematical Statistics, Complex Functions and Integral Transformation, Digital Signal Processing, Principle of Communications, Signal & Systems, Field & Wave for Electromagnetics, Random Signal Analysis, C Language Engineering Project, Electronic System Design, etc.

Work Experience

2016.07 – 2016.08   **BOE Technology Group Co., Ltd., P. R. China**   **Electronic circuit researcher**

- **Duty:** Optimization design of mobile phone display circuit for SAMSUNG, MI, VIVO and OPPO etc.

Publications

[1]   **Zhao, S**. Zhou, Y.and Chen, J., 2025 An Active Learning Pipeline for Biomedical Image Instance Segmentation

with Minimal Human Intervention. *In Proceedings of the German Conference on Medical Image Computing, BVM 2025.*

[2]   Christ, R, Siemes, D, **Zhao, S**, Widera, L, Spangenberg, P, Lill, J, Thiebes, S, Bottek, J, Borgards, L, PinhO, A, Silva, N, Monteiro, S, Gunzer, M, Siebels, B, Voss, H, Schlueter, H, Shevchuk, O, Chen, J and Engel, D. 2025. Inhibition of Tumour Necrosis Factor Alpha by Etanercept attenuates Shiga Toxin- induced brain pathology. In Proceedings of the Journal of Neuroinflammation.

[3]   Zhou, Y., **Zhao, S**., Sonneck, J. and Chen, J., 2024. 2D Label-free Prediction of Multiple Organelles Across Different Transmitted-light Microscopy Images with Bag-of-Experts. *bioRxiv*, pp.2024-05.

[4]   Hagemann, N., Qi, Y., Mohamud Yusuf, A., Li, A., Zhang, X., Spangenberg, P., Squire, A., Doeppner, T.R., Jin, F., **Zhao, S**. and Chen, J., 2024. Arterial specification precedes microvascular restitution in the peri-infarct cortex that is driven by small microvessels. *Journal of Cerebral Blood Flow & Metabolism*, p.0271678X241270407.

[5]   Jung, M., Nagel, D., **Zhao, S**., Hasenberg, A., Chen, J., Gunzer, M.,2024, AI powered all optical cell death pathway detection in neutrophils for high thoughput screening. In *Proceedings of the* 2024 Neutrophil International Symposia

[6]   Sonneck, J., **Zhao, S**. and Chen, J., 2023. On the risk of manual annotations in 3D confocal microscopy image segmentation. In *Proceedings of the IEEE/CVF International Conference on Computer Vision* (pp. 3894-3902).

[7]   Sonneck, J., **Zhao, S**. and Chen, J.,2023. Biologically plausible segmentation with deep learning: relevance and importance for downstream analysis of 3D confocal microscopy images. In Proceedings of the Focus on Microscopy 2023.

[8]   Zheng, L., **Zhao, S**., Zhang, Y. and Yu, L., 2020. Thermal infrared pedestrian tracking using joint siamese network and exemplar prediction model. Pattern Recognition Letters, 140, pp.66-72.

[9]   Enhan, L., Rui, Z., **Shuo, Z**. and Ru, W., 2020. An infrared pedestrian target tracking method based on video prediction. J. Harbin Inst. Technol, 52(10), pp.192-200.

Patents

[1]   Zheng, L., Zhang, Y., **Zhao,** S. and Bing, X., 2020. *An infrared pedestrian tracking method based on online template prediction*, CN Patent, CN110782480A, Feb. 11, 2020.

[2]   Zheng, L., Bing, X., **Zhao, S.** Li, Z. and Zhang, Y., *A channel weighted generative adversarial network method for super-resolution reconstruction of retinal images*, CN Patent, CN110796599A, Feb. 14, 2020.

[3]   Zheng, L., Wang, Y., **Zhao, S.** and Bing, X., 2018. *Face stick figure generation method based on convolutional neural network*, CN Patent, CN108257194A, July. 06, 2018.

Skills

- Good programming knowledge in C, MATLAB and Python (PyTorch), and confident use of Linux

- Experienced in conceptualizing, developing, and testing new algorithms, as well as optimizing existing ones in image processing, machine learning, neural networks, pattern recognition, signal processing, and artificial intelligence (AI).

- Strong knowledge in the field of image analysis and computer vision using classical and modern methods, e.g. deep learning, etc.

- Language: English – fluent (IELTS 6.5- Listening:6.5, Reading: 7.0, Writing: 6.0, Speaking:5.5); Chinese (Mandarin)