

Yanhua Chen
Division of Science, Engineering and Health Studies (SEHS)
Email: sophia.chen@cpce-polyu.edu.hk



Research interests

Geospatial AI
Image processing
Machine learning
Urban analytics
Urban remote sensing.

Personal profile

I am a Lecturer with interdisciplinary research expertise in artificial intelligence, remote sensing, and urban environmental studies. My research focuses on applying advanced machine learning and deep learning techniques to real-world challenges, including urban climate modelling, public health, and intelligent detection systems. I have contributed to a range of high-impact publications in areas such as multimodal data fusion, urban heat island analysis, and computer vision. My current work aims to develop innovative, data-driven solutions that bridge technology and sustainable urban development.

Employment

Division of Science, Engineering and Health Studies (SEHS)
College of Professional and Continuing Education (CPCE)
2 Jul 2025 → present

Research outputs

Fed-FTTP: Federated fundus test-time personalization for cross-site multi-label ocular disease recognition

Wang, S., Hu, Y., Tang, Z. R., Zhang, T. T., Chen, Y., Wang, D. & Wang, X., 1 Dec 2026, In: Biomedical Signal Processing and Control. 128, 111251.

Federated Generation and Fusion for Privacy-Preserving Cross-Domain Optic Disc and Cup Segmentation in IoT-Enabled Healthcare

Hu, Y., Zhu, Y., Zhang, T. T., Yu, Z., Zhang, S., Chen, Y., Tang, Z. R. & Liu, Z., 1 Oct 2026, In: IEEE Internet of Things Journal. 13, 20, p. 47968-47981 14 p.

Category-Guided Vision-Language Model for IoMT-Enabled Medical Report Generation under Heterogeneous Imaging Data

Liu, X., Jin, Q., Zhang, T. T., Tang, Z. R., Chen, Y. & Liu, Z., 1 Sept 2026, In: IEEE Internet of Things Journal. 13, 17, p. 38459-38473 15 p.

Thermal-Physics Inspired Cross-Modal Alignment for AAV-Based RGB-T Salient Object Detection

Gao, H., Zheng, Y., Xiao, L., Chen, Y., Song, K., Wu, W. & Tang, Z.-R., 3 Jun 2026, In: IEEE Journal of Selected Topics in Applied Earth Observations and Remote Sensing. 19, p. 20923-20939 17 p.

MPCANet: Multi-physical prior guided cross-modal attention and fusion network for RGB-T salient object detection

Gao, H., Zheng, Y., Li, C., Xiao, L., Zhang, T.-T., Chen, Y. & Tang, Z.-R., Apr 2026, In: Expert Systems with Applications. 322

Physics-Inspired Prior Learning and Target-Aware Multimodal Fusion for RGB-T Pedestrian Detection

Gao, H., Wang, S., Zheng, Y., Hu, Y., Tang, Z.-R. & Chen, Y., Dec 2025, p. 297-302. 6 p.

Assessing Urban Safety Perception Through Street View Imagery and Transfer Learning: A Case Study of Wuhan, China
Chen, Y. & Tang, Z. R., Sept 2025, In: Sustainability (Switzerland). 17, 17, 7641.

Modelling inter-pixel spatial variation of surface urban heat island intensity

Chen, Y., Chen, W. Y., Giannico, V. & Laforzezza, R., Aug 2022, In: Landscape Ecology. 37, 8, p. 2179-2194 16 p.

Predicting hematoma expansion in intracerebral hemorrhage from brain CT scans via K-nearest neighbors matting and deep residual network

Tang, Z. R., Chen, Y., Hu, R. & Wang, H., Jul 2022, In: Biomedical Signal Processing and Control. 76, 103656.

Multi-expert learning for fusion of pedestrian detection bounding box

Tang, Z. R., Hu, R., Chen, Y., Sun, Z. H. & Li, M., 6 Apr 2022, In: Knowledge-Based Systems. 241, 108254.

A Multilayer Neural Network Merging Image Preprocessing and Pattern Recognition by Integrating Diffusion and Drift Memristors

Tang, Z., Zhu, R., Hu, R., Chen, Y., Wu, E. Q., Wang, H., He, J., Huang, Q. & Chang, S., Sept 2021, In: IEEE Transactions on Cognitive and Developmental Systems. 13, 3, p. 645-656 12 p., 9120279.

Non-spike timing-dependent plasticity learning mechanism for memristive neural networks

Tang, Z., Chen, Y., Wang, Z., Hu, R. & Wu, E. Q., Jun 2021, In: Applied Intelligence. 51, 6, p. 3684-3695 12 p.

Remote Sensing and Urban Green Infrastructure: A Synthesis of Current Applications and New Advances

Chen, Y., Sanesi, G., Li, X., Chen, W. Y. & Laforzezza, R., 1 Jan 2021, *Urban Remote Sensing: Monitoring, Synthesis, and Modeling in the Urban Environment, Second Edition*. wiley, p. 447-468 22 p.

Fully memristive spiking-neuron learning framework and its applications on pattern recognition and edge detection

Tang, Z., Chen, Y., Ye, S., Hu, R., Wang, H., He, J., Huang, Q. & Chang, S., 25 Aug 2020, In: Neurocomputing. 403, p. 80-87 8 p.

Deep learning scene recognition method based on localization enhancement

Guo, W., Wu, R., Chen, Y. & Zhu, X., 10 Oct 2018, In: Sensors (Switzerland). 18, 10, 3376.

Projects

Investigate Reliability Features for AI to Predict Capacitance Fluctuations in Batteries Under Extreme Conditions

Chen, Y. (CoI)
26/11/25 → 25/05/27

Modeling Urban Cold Island Effects with Neighborhood Interactions: A Multimodal Large Language Model Approach to Linking Urban Climate and Human Health

Chen, Y. (PI)
26/11/25 → 25/05/27