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Exploring deep learning for data-efficient and generalizable visual recognition

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Kai He

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Leiden, the Netherlands

Curriculum Vitae

Kai He was born in Yangzhou, China on April 2, 1995. In 2013, he started his bachelor's study at Soochow University in Soochow, Jiangsu, China, and received his bachelor's degree in 2017. After that, he started his master's study at Shanxi Normal University in Xi'an, China, and obtained his master's degree in 2021 under the supervision of Prof.dr. Yali Peng.

In December 2021, he started his PhD research supported by the China Scholarship Council and worked at the MediaLab in the Leiden Institute of Advanced Computer Science (LIACS), Leiden University, the Netherlands, under the supervision of Prof.dr. Michael Lew and Dr. Erwin Bakker. During his PhD studies, he took courses in Computer Vision by Learning and scientific conduct, among others. Kai He's research interests include computer vision, multimedia retrieval and deep learning. He is focusing on few-shot learning. He has published papers in international journals and conferences, including Applied Intelligence, International Journal of Multimedia Information Retrieval, International Conference on Intelligent Computing *etc.* He also serves as a reviewer for some conferences and journals, such as IEEE Access, IEEE Transactions on Cognitive Communications and Networking

Publication List

Main publications for the thesis

- **He, K.**, Pu, N., Lao, M., and Lew, M.S. “Few-shot and meta-learning methods for image understanding: a survey.” International Journal of Multimedia Information Retrieval, 2023.
- **He, K.**, Pu, N., Bakker, E. M., and Lew, M. S. “ProtoSimNet: Exploiting Prototype Similarity for Few-shot Learning.” accepted by the Neurocomputing journal, 2026.
- **He, K.**, Bakker, E. M., and Lew, M. S. “Attention-guided Feature Pyramid Network for few-shot learning.” Benelux Conference on Artificial Intelligence and Machine Learning, 2024.
- **He, K.**, Bakker, E. M., and Lew, M. S. “Adaptive Multi-scale Feature Fusion Network for Few-Shot Learning.” International Conference on Intelligent Computing, 2025.
- **He, K.**, Pu, N., Lao, M., Bakker, E. M., and Lew, M.S. “Dual selective knowledge transfer for few-shot classification.” Applied Intelligence, 2023.

Other publications

- Lao, M., Pu, N., Liu, Y., **He K.**, Bakker, E. M., and Lew, M. S. “COCA: Collaborative CAusal Regularization for Audio-Visual Question Answering.” AAAI Conference on Artificial Intelligence, 2023.