

Deep Long-tailed Data Learning towards Visual Recognition

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Abstract

Although deep learning has made great progress, a good model often requires a large amount of artificially balanced and annotated data. Unfortunately, real-world data are often unbalanced, typically exhibiting a long-tailed distribution, which refers to a small number of classes with abundant training samples but the remaining large number of classes only with very few training instances. Under the circumstances, the performance of deep learning models trained on long-tailed data declines sharply in the tail classes. However, tail classes cannot be ignored in various situations such as rare disease diagnosis, and anomaly detection. Subsequently, long-tailed data is still very challenging to deep learning. In this talk, the impact of long-tailed data on deep learning models will be first introduced. Then, the research progress in this area will be reviewed, including some representative methods in the literature. Lastly, the potential research directions in this field will be discussed.



Yiu-ming Cheung is Chair Professor of Artificial Intelligence at Hong Kong Baptist University, Yangtze River Scholar (Chair Professor) of the Ministry of Education, and Senior Research Fellow of the Hong Kong Research Grants Council. He also serves as Dean of the Shenzhen Research Institute of Hong Kong Baptist University and Deputy Director of the Institute of Computational and Theoretical Sciences. He is a Fellow of the European Academy of Sciences and Arts and the European Academy of Engineering, as well as a Fellow of the Institute of Electrical and Electronics Engineers (IEEE), the

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