Research Seminar

Imbalanced Data Learning: Always Needed?

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Mode : Hybrid
Venue: PQ306, Core P, PolyU / Online via Zoom

► Abstract

In many practical problems, the number of data forming difference classes can be quite imbalanced, which could make the performance of the most machine learning methods become deteriorate to a certain degree. In general, the problem of learning from imbalanced data is nontrivial and challenging in the fields of machine learning and data science, which has attracted growing attentions in recent years. In this talk, we will first introduce the class imbalanced learning and its related techniques. Then, whereas the class imbalance is quite common from the practical perspective, we will attempt to address the problem naturally arisen: When should such a class imbalance be taken into account in the machine learning tasks? Furthermore, considering the unavailability of class labels in some applications, this talk will also present our recent work on imbalanced data clustering in an unsupervised learning environment. Lastly, some challenges in this field will be introduced.

► About the Speaker

Yiu-ming Cheung received a Ph.D. degree from the Department of Computer Science and Engineering at the Chinese University of Hong Kong. Currently, he is a Professor in the Department of Computer Science at Hong Kong Baptist University (HKBU). His research interests include Machine Learning, Data Science, Computer Vision, Pattern Recognition, and Optimization. He has published over 250 articles in prestigious journals and high-quality conferences, including TPAMI, TNNLS, TIFS, TIP, TKDE, TCYB, CVPR, IJCAI, and AAAI. Prof. Cheung is the recipient of the 2011 Best Research Award in the Department of Computer Science, HKBU, and six conference paper awards. In recognition of his innovative work in knowledge transfer, he was awarded: (1) the Gold Medal with Distinction (i.e. the highest grade in Gold Medals), and Swiss Automobile Club Prize, in the 45th International Exhibition of Invention (IEI), Geneva 2017; (2) the Gold Medal with Congratulations of Jury (i.e. the highest grade in Gold Medals) in the 46th IEI, Geneva 2018. Also, he was the Gold Award Winner of the Hong Kong Innovative Invention Award in the Seventh Hong Kong Innovative Technologies Achievement Award 2017. He has been elected as an IEEE CIS Distinguished Lecturer, and the Changjiang Chair Professor awarded by the Ministry of Education of China. He has been serving as an Associate Editor for several prestigious journals, including TNNLS, TCYB, TETCI, TCDS, and Pattern Recognition. Currently, he is an Engineering Panel member of the Research Grants Council, Hong Kong, and a Fellow Committee member of IEEE Computational Intelligence Society. He is a Fellow of IEEE, IET, and British Computer Society (BCS), respectively.

Seats are limited!

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