

Title: **Tensor Networks and Neural Networks (3 hours)**

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Abstract:

In the big data era, multiway data are almost everywhere, e.g., recommendation systems, face recognition, sensor networks, etc. Tensor factorization is an important approach to multiway data analysis. The first part of this tutorial will first introduce canonical methods as well as recent developments of tensor factorization.

The second part will also generalize tensor decomposition methods to tensor networks and discuss the connections between tensor networks and deep neural networks.

Bio:

Zenglin Xu is a Professor in School of Computer Science and Engineering at University of Electronic Science and Technology of China(UESTC). He is the founder and director of the Statistical Machine Intelligence and LEarning (SMILE) Lab. He is a recipient of China Thousand Talents(Youth) Program. He obtained his PhD in Computer Science and Engineering from the Chinese University of Hong Kong. His research interest includes machine learning and its applications on social network analysis, health informatics, and cyber security analytics. He has published over 50 papers in prestigious journals and conferences such as NIPS, ICML, IJCAI, AAAI, IEEE PAMI, IEEE TNN, etc. He is also the recipient of the APNNS young researcher award, and the best student paper honorable mention of AAAI 2015. Dr. Xu has been a PC member or reviewer to a number of top conferences such as NIPS, ICML, AAAI, IJCAI, etc. He regularly servers as a reviewer to IEEE TPAMI, JMLR, PR, IEEE TNN, IEEE TKDD, ACM TKDD, etc.