Deep learning is currently an active research area in machine learning and pattern recognition society. It has gained huge successes in a broad area of applications such as speech recognition, computer vision, and natural language processing. With the sheer size of data available today, Big Data brings big opportunities and transformative potential for various sectors; on the other hand, it also presents unprecedented challenges to harnessing data and information. As the data keeps getting bigger, deep learning is coming to play a key role in providing Big Data predictive analytics solutions. In this talk, I will provide a brief overview of deep learning, and a map-reduce-based scalable deep learning implementation that can handle large-scale data classification problems. I will also discuss a multimodal deep learning approach for information integration. Finally, I will briefly present our current research efforts in bioinformatics and highlight the challenges to Big Data, as well as the future trends.

Bio:
Xue-wen Chen is currently a professor in the Department of Computer Science at Wayne State University. He is a senior IEEE member and the chair of IEEE Computer Society Technical Committee on Computational Life Sciences. He is the co-founder and steering committee chair of the IEEE Conference on Healthcare Informatics, Imaging, and Systems Biology, and a member in the IEEE Computer Society Bioinformatics and Biomedicine Steering Committee. He is the editor-in-chief of the International Journal of Computational Intelligence on Bioinformatics and Systems Biology. He also serves in the editorial board in several international journals. He is a member of the leadership team in the IEEE Life Science Initiative. Dr. Chen received his PhD degree from Carnegie Mellon University, Pittsburgh, USA in 2001. He was a recipient of the NSF CAREER Award. He served as conference chair (and co-chairs) for ACM Conference on Information and Knowledge Management (CIKM) 2012, the IEEE international Conference on Healthcare Informatics, Imaging, and Systems Biology, 2011, the IEEE International Conference on Bioinformatics and Biomedicine (BIBM) in 2009 and the International Conference in Machine Learning and Applications in 2011 and 2008. He also served as a program committee member in numerous conferences such as KDD, CIKM, BIBM, ICDM, and CEC. His research interest includes machine learning, data mining, bioinformatics, systems biology, and healthcare informatics.