Prof Cao is the Distinguished Chair in Artificial Intelligence at Macquarie University, the director of FSE Research Centre for Frontier AI Research, and an Australian Research Council Future Fellow (Level 3, professorial level). He has been a full professor in information technology at University of Technology Sydney (UTS) since 2009, and the Founding Director of UTS Advanced Analytics Institute (now Data Science Institute) in 2011. He was awarded a PhD in Pattern Recognition and Intelligent Systems in Chinese Academy of Sciences and a PhD in Computing Science at UTS. His strong leadership, original research, and impactful applications through widespread industry/government engagement and collaborations in AI, data science, machine learning etc. have been acknowledged by an individual Australian Eureka Prize for his Excellence in Data Science, an ACM Distinguished Scientist, the founding Editor-in-Chief of Springer's Journal of Data Science and Analytics, and Editor-in-Chief of IEEE Intelligent Systems (oldest AI pub in IEEE), etc.

He joined UTS in 2005 after he served as an editor, marketing strategist, deputy director and then Chief Technology Officer in Beijing. He was also the Research Leader of the Data Mining Program at the Australian Capital Markets Cooperative Research Centre. He serves/served on editorial boards of such journals as ACM Computing Surveys and Machine Learning, as conference general chair such as for KDD2015, program co-chair, area/vice-chair of conferences such as IJCAI, AAAI, DSAA, PAKDD and ICDM, and SPC/PC member on over 100 conferences.

Longbing has been working on promoting Data Science research, education and applications since he was a CTO and then joined academia. His research has focused on understanding complex data, behaviors and systems. He initiated and leads research on *non-IID learning*, *behavior informatics*, *agent mining*, and *domain driven data mining*, in addition to general issues in data science, data mining, machine learning, applied analytics, and artificial intelligence and complex intelligent systems. He works with a team consisting of PhD students, research fellows, and visiting scholars on the following primary research interests, with 4 monographs, 4 edited books, and over 400 journal/conference publications.

- *Artificial intelligence and intelligent systems*: including broad AI areas, and knowledge representation and system design of open complex intelligent systems, metasynthetic computing and engineering, involving large and complex intelligent systems, and humanoid AI.
- *Data science and big data analytics*: including data science and analytics, applied statistics, data mining and machine learning for deeply understanding complex data characteristics, interactions and couplings, multi-source heterogeneous data across organizations, markets and systems, etc., which contribute to the foundation of data science and big data analytics: *non-IID learning*.
- *Enterprise data science innovation*: exploring enterprise innovation via data science and analytics in combination with business, government, social, organizational, financial, banking, telecom, insurance, educational etc. data and environment, as well as inventing and producing infrastructure, solutions, systems, algorithms and services for enterprise data science and business analytics applications.
- *Behavior, social and economic informatics*: leading research on informatics and computing for complex behavioral, social, economic and financial problems, including modeling and representation, learning complex events and sequences, handling complex couplings and heterogeneities, understanding intent and sentiment, quantifying risk, impact and utility, detecting and predicting occurring and non-occurring behaviors and their evolution, significant changes and impact, and providing solutions for tailored and active management, etc.
- *Agent mining*: proposed the concept *agent mining* to synergize multi-agent systems with data analytics and learning, and conducted research which involves fundamental infrastructure, agent-based distributed multi-source data mining, agent behavior learning, agent-based cloud analytics, and applications in financial trading agents etc., which contribute to data-driven artificial intelligence and systems.

He pioneered a series of initiatives in AI and data science in research, education, and applications since he was a CTO: the first Australian lab Data Science and Knowledge Discovery lab at UTS in 2007, Big Data Summit series in 2009, UTS Advanced Analytics Institute and world-first research Master/PhD degrees in Analytics in 2011, IEEE Task Force on Data Science and Advanced Analytics (DSAA) and IEEE Task Force on Behavior, Economic and Soci-cultural Computing (BESC) in 2013, IEEE Conference on Data Science and Advanced Analytics (IEEE DSAA: www.dsaa.co) and the ACM SIGKDD Australia and New Zealand Chapter (www.anzkdd.org) in 2014, International Journal of Data Science and Analytics (www.springer.com/41060) in 2015; and led KDD2015 in Sydney and special track on AI in FinTech with IJCAI, etc.

In recent 30 years, building on his mixed experience in industry and academia, his main efforts have been made on bridging the gaps between data science fundamental research and best practice for enterprise analytics. He has been highly inspired by challenging and critical real-world business, social and economic problems. He has been leading many major grants and projects sponsored by federal governments, state governments, banks, stock exchanges, financial firms, telecommunication providers, airways, insurance companies, health service providers, online and retail business, education providers, and multi-national vendors to work on big data analytics. His work involves business intelligence, customer relationship analysis, marketing analytics, behavior analytics, risk analytics, community analytics, service enhancement, fraud detection, exception analysis, debt analytics, learning analytics, and compliance analytics towards smarter business and decision-making. His following expertise and experience has been widely recognized in the relevant communities: enterprise applications of big data analytics and intelligent systems and decisions in areas such as payment accuracy, debt management, risk management, fraud/outlier detection, social security, market surveillance, health care, insurance, investment, marketing, capital markets and so on in the real world. His work together with the team, in particular in behavior analysis and risk management, has led to significant (billions) dollar savings and performance improvement in such areas as taxation, social welfare, immigration, capital markets, banking, marketing, financial services, education and insurance, e.g., for AMP, CBA, ATO, Centrelink/Department of Human Services, DIBP, IAG, Westpac, and Microsoft, SSE, CMCRC, HCF, recognized in governmental reports, media and OECD report.

Longbing's leadership has spread from CTO in business to directorship of research institution, embodied by his long-term vision, big picture, forward-thinking, strategic planning, and performance and impact-based management and deliverables. In business and research, he managed hundreds of millions of fund involving large business and research projects. He created the UTS Advanced Analytics Institute, a cross-faculty university research institute, effectively implemented a mixture business model by integrating high-quality Research, high-calibre Education with high-impact Development (RED) in data science and big data analytics, to best advance theoretical innovation, education and training, and best practice in the real-world big data analytics through a highly interdisciplinary and cross-domain engaging approach, recognized as the first analytics research group in Australia with demonstrated wide engagements and high business impact recognized by the communities, such as in the first whitepaper on big data strategy issued by the Australian federal government, two of three commonwealth papers on big data, and several other special mentions such as in ABC, InnovationAus and Wired.