

Big Data for Better Science

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Abstract :

世界的数字化带来大数据时代的兴起。数据科学(Data Science)作为一门研究数据的新兴学科，旨在系统地学习数据的特性、结构以及相互作用并从中获取相关的信息和知识。它结合了多个领域的理论和技术，包括应用数学、统计学、信息学中的模式识别、机器学习、信号处理、数据存储与管理、可视化以及高性能计算，等等。如今，数据科学已经渗入到包括生物学、医学信息、医疗卫生、社会科学、人文科学以及工程学之中，并深深影响着经济、商业和金融业的发展。数据科学涉及到数据从采集、探索到分析、交流的整个生命周期，已经成为现代跨学科科学研究的核心。

本次报告将会对英国帝国理工学院(Imperial College London)数据科学研究所(Data Science Institute)的发展历程、战略目标以及未来发展方向等进行相关的介绍。英国帝国理工学院数据科学研究所成立于2014年4月。以数据科学基础为科研方向，数据科学研究所旨在发展数据科学和大数据背景下最前沿的理论、技术及系统。数据科学研究所为帝国理工的科学家和合作伙伴提供了以数据为驱动的跨学科研究支持，并同时培养下一代数据科学家。目前，帝国理工数据科学研究所正在快速发展成为英国数据科学的一个重要研究中心，并与全球多所顶尖科研机构以及企业建立了紧密的合作关系。



Yike Guo is a Professor of Computing Science in the Department of Computing at Imperial College London. He is the founding Director of the Data Science Institute at Imperial College, as well as leading the Discovery Science Group in the department. Professor Guo also holds the position of CTO of the tranSMART Foundation, a global open source community using and developing data sharing and analytics technology for translational medicine. Professor Guo received a first-class honours degree in Computing Science from Tsinghua University, China, in 1985 and received his PhD in Computational Logic from Imperial College in 1993 under the supervision of Professor John Darlington. He founded InforSense, a software company for life science and health care data analysis, and served as CEO for several years before the company's merger with IDBS, a global advanced R&D software provider, in 2009.

He has been working on technology and platforms for scientific data analysis since the mid-1990s, where his research focuses on knowledge discovery, data mining and large-scale data management. He has contributed to numerous major research projects including: the UK EPSRC platform project, Discovery Net; the Wellcome Trust-funded Biological Atlas of Insulin Resistance (BAIR); and the European Commission U-BIOPRED project. He is currently the Principal Investigator of the European Innovative Medicines Initiative (IMI) eTRIKS project, a €23M project that is building a cloud-based informatics platform, in which tranSMART is a core component for clinico-genomic medical research, and co-Investigator of Digital City Exchange, a £5.9M research programme exploring ways to digitally link utilities and services within smart cities. Professor Guo has published over 200 articles, papers and reports. Projects he has contributed to have been internationally recognised, including winning the "Most Innovative Data Intensive Application Award" at the Supercomputing 2002 conference for Discovery Net, and the Bio-IT World "Best Practices Award" for U-BIOPRED in 2014. He is a Senior Member of the IEEE and is a Fellow of the British Computer Society.