

大数据与超级计算研讨会通知

各位老师、各位同学：

中山大学数据科学与计算机学院邓超凡教授团队邀请美国纽约州立石溪大学 XIAO Keli 教授和 ZHANG Na 博士来我校进行学术交流，并于 2015 年 12 月 25 日举办题为“大数据与金融：股票分析”和“利用超级计算机进行血小板多尺度建模”的研讨会，具体内容如下：

一、时间：2015 年 12 月 25 日，10:00—12:15

二、地点：中山大学南校区 336 栋 210 会议室

三、报告安排

时间	报告题目	主讲人
10:00-11:00	Session 1 Big Data and Finance: The Case of Stock Analysis 大数据与金融：股票分析	XIAO Keli (美国纽约州立石溪大学)
11:00-11:15	Break 休息	
11:15-12:15	Session 2 Efficient Multiscale Platelets Modeling using Supercomputers 利用超级计算机进行血小板多尺度建模	ZHANG Na (美国纽约州立石溪大学)

四、报告摘要

Session 1:

In this talk, I introduce two big data implementations in finance. First, I introduce a Degree of Social Attention (DSA) framework, by leveraging on the vast social networks data, to bring profound impacts on research and practice in finance including market efficiency analysis. Traditional schemes in finance focus on identifying significant abnormal returns triggered by important events such as regular financial announcements, but information from complex database is rarely studied. Related data-driven approaches mainly focus on developing trading strategies using social media data, while the results usually lack theoretical explanations. This work

fills the gap between the usage of social media data and financial theories. The framework is based on an influence propagation model, and it serves as a linkage between social media activities and the stock market.

Session 2:

My work focuses on developing multiscale models and efficient numerical algorithms for simulating platelets on supercomputers. More specifically, the development of multiple time stepping algorithm can be applied to optimally use computing resources to model platelet structures at multiple scales, enabling the study of flow-induced platelet-mediated thrombogenicity. In order to achieve this, sophisticated parallel computing algorithms are developed and detailed performance analysis has been conducted on supercomputers with different architectures. The performance results manifest the possibility of simulating the millisecond-scale hematology at resolutions of nanoscale platelets and mesoscale bio-flows using millions of particles. The computational methodology using multiscale models and algorithms on supercomputers will enable efficient predictive simulations for initial thrombogenicity study and may provide a useful guide for exploring mechanisms of other complex biomedical problems at disparate spatiotemporal scales. The talk will cover multiscale models, a double punch speedup strategy, i.e., combined algorithmic multiscale multiple time stepping and GPGPU acceleration, and performance analysis.

五、主讲人简介

XIAO Keli (肖可砾) 简介: 美国纽约州立大学助理教授。2006 年获得武汉工业大学计算机专业学士学位, 2009 年获得罗格斯大学计量金融学专业硕士学位, 2008 年获得纽约城市大学皇后学院计算机专业硕士学位, 2013 年获得罗格斯大学金融学专业博士学位。他的研究兴趣包括: 实证资产定价、金融泡沫和数据挖掘。他已经在重要的期刊和会议上发表了多篇论文, 如 ACM TKDD、Neruocomputing、ACM SIGKDD、IEEE ICDM。他担任许多国际会议的程序委员会成员, 如 ACM SIGKDD、IEEE ICDM、SDM 和 Dasfaa。他还担任 TKDE、KAIS 和 Frontier in Applied Mathematics and Statistics 等期刊的审稿人。

ZHANG Na (张娜) 简介: 2011 年获得南开大学物理专业学士学位; 2015 年获得美国纽约州立大学石溪分校博士学位, 博士论文题目为“面向血小板多尺度建模的并行算法设计与分析”。她是 2015 超级计算博士论文竞赛的银牌获得者。2016 年 1 月, 他将前往 VMware 公司的 CTO 办公室工作。