Integrating Crowd and Cloud Resources for Making Sense of Big Data

Professor Michael Franklin
Dept of Computer Science
UC Berkeley

Abstract:
In his seminal 1960 paper on Man-Computer Symbiosis, J.C.R. Licklider envisioned hybrid human/computer systems that could "think as no human brain has ever thought and process data in a way not approached by the information-handling machines we know today." While visionary in his day, it is unlikely the Licklider could have anticipated the opportunities for human computation enabled by today's emerging Internet-based crowdsourcing platforms. Such platforms typically can be accessed via an Application Programming Interface (API), which makes it feasible to construct large scale systems that combine the machine resources of cloud computing with the complementary computational abilities of people. Building such systems, however, raises a number of interesting architectural challenges, due to vast differences in capabilities, speed, and consistency properties of these resources, as well as human considerations such as motivation, fatigue, and quality of life concerns, to name a few. The AMPLab at UC Berkeley is developing systems that deeply integrate machine learning, warehouse-scale computing, and crowd resources to support data analysis and understanding. In this talk I will describe some of our work on crowdsourcing for data acquisition and analysis, and pose some challenges for the middleware that will be required to construct and efficiently operate these systems.

About the Speaker:
Michael Franklin is the Thomas M. Siebel Professor of Computer Science at UC Berkeley, where he has been on the faculty since 1999. His research focuses on new approaches for data management in distributed and parallel environments. At Berkeley, he directs the Algorithms, Machines and People Laboratory (AMPLab), a cross-disciplinary collaboration that is developing a new open source software stack for data analytics and scalable machine learning. The AMPLab was awarded a National Science Foundation Expeditions in Computing grant, which was announced in March 2012 as part of the White House's initiative on Big Data research. Previously, he was a founder and CTO of Truviso, Inc. a real-time data analytics company recently acquired by Cisco Systems. He is an ACM Fellow and winner of the ACM SIGMOD Test of Time Award. He received the Best Paper award at NSDI 2012, Best Demo awards at VLDB 2011 and SIGMOD 2012 and the 2011 Outstanding Advisor Award from the Computer Science Graduate Student Association at Berkeley. He is currently on sabbatical at the Cloud Computing and Big Data Research Center at East China Normal University in Shanghai.

All are welcome!
For enquiries, please call 2859 2180 or email enquiry@cs.hku.hk
Department of Computer Science
The University of Hong Kong