

Workshops

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Workshop I: Big Data Meets Large-Scale Computing

Part of the Long Program Science at Extreme Scales: Where Big Data Meets Large-Scale Computing

SEPTEMBER 24 - 28, 2018

OVERVIEW

SPEAKER LIST

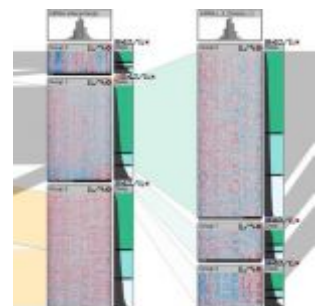
LODGING

SCHEDULE

APPLICATION & REGISTRATION

Overview

Increasingly large data sets are being ingested and produced by simulations. What experience from large-scale simulation is transferable to big data applications? Conversely, what new optimal algorithms will emerge that are motivated by data-intensive applications being pushed to large scales? How will they enrich traditional simulation? As long as the software stacks,



production facilities, and even developer and user communities remain separate, many opportunities for mutual enhancement will be unrealized. This workshop will discuss:

benefits of *in situ* convergence of simulation, analytics, and machine learning

steering in high-dimensional parameter space

smart data compression

data-driven modeling (e.g., refinement of empirical functions through learning)

physics-based “regularization” of analytics

simulation as a source of training data

learning to impute missing data

evolving requirements of high-performance analytics and simulation

scalable hierarchical algorithms for analytics and simulation

detecting and exploiting data sparsity

open problems, where no scalable methods yet exist

The workshop will bring together analysts and developers of computationally and data-intensive applications interested in early exploitation of extreme-scale computing platforms to define common ground and seek new opportunities.

The workshop will include a poster session; a request for posters will be sent to registered participants in advance of the workshop.

ORGANIZING COMMITTEE

Hans-Joachim Bungartz, Chair (Technical University Munich (TUM), Computer Science)

Emmanuel Candes (Stanford University, Applied and Computational Mathematics)

Chris Johnson (University of Utah, Imaging & Biomedical Computing)

David Keyes (King Abdullah Univ. of Science and Technology (KAUST), Applied Mathematics and HPC)

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