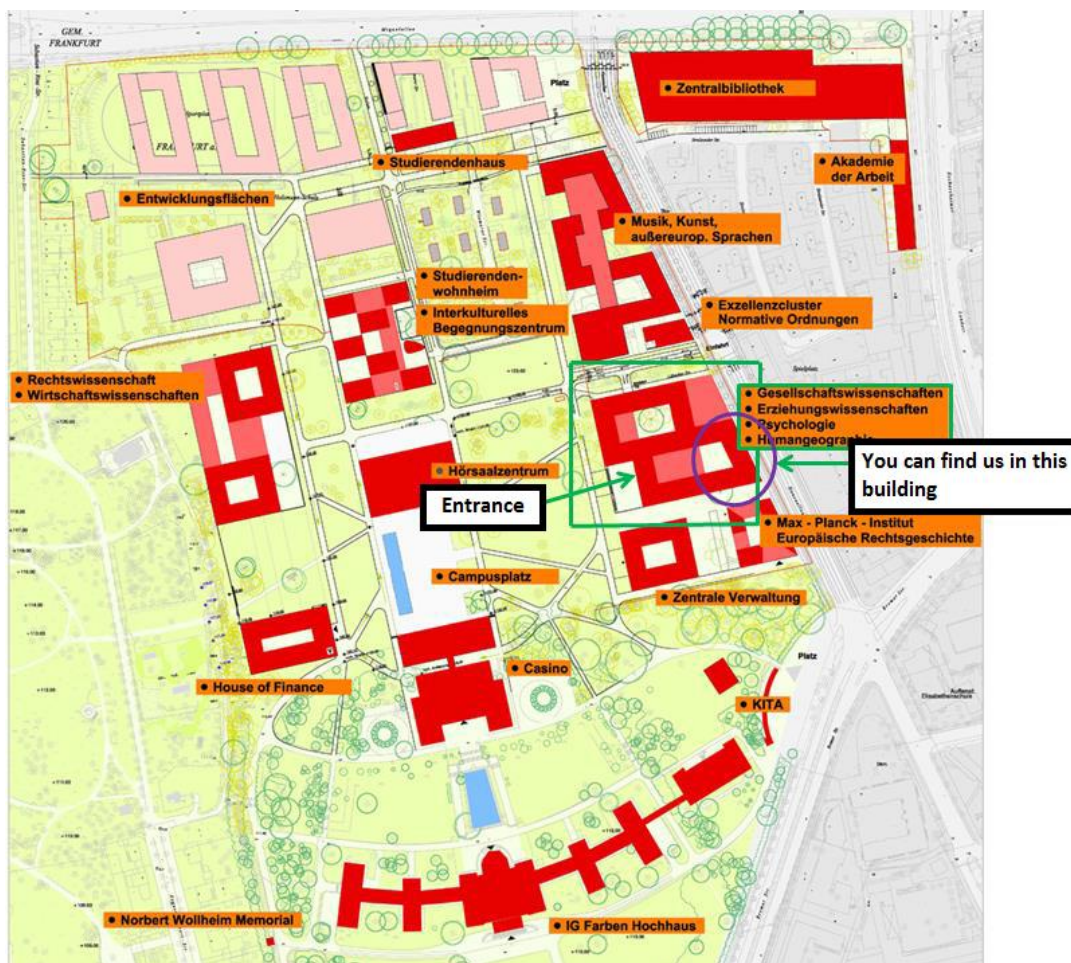


DFG SPP 1736

“Algorithms for Big Data”

Meeting 2014: 29.09-01.10



Location Room 168, PEG Building (1st floor)
Campus Westend
Grüneburgplatz 1, 60323 Frankfurt am Main

Locations

Main Event Location

Room 168, PEG Building (1st floor)

Campus Westend (see detailed map on the front page)

Grüneburgplatz 1, 60323 Frankfurt am Main

⇒ How to reach us by public transportation?

- From **Hauptbahnhof** take S-Bahn 1 / 2 / 3 / 4 / 5 / 6 / 8 / 9 to “Hauptwache” (2nd stop), thereafter take U-Bahn 1 / 2 / 3 / 8 to “Holzhausenstraße” (3rd stop) and walk 10 minutes. Or take S-Bahn 1 / 2 / 3 / 4 / 5 / 6 / 8 / 9 to “Konstabler Wache” (3rd stop), thereafter Bus 36 (direction “Westbahnhof”) to “Uni Campus Westend”.
- From **Südbahnhof** take U-Bahn 1 / 2 / 3 / 8 to “Holzhausenstraße” (6th stop) and walk 10 minutes.

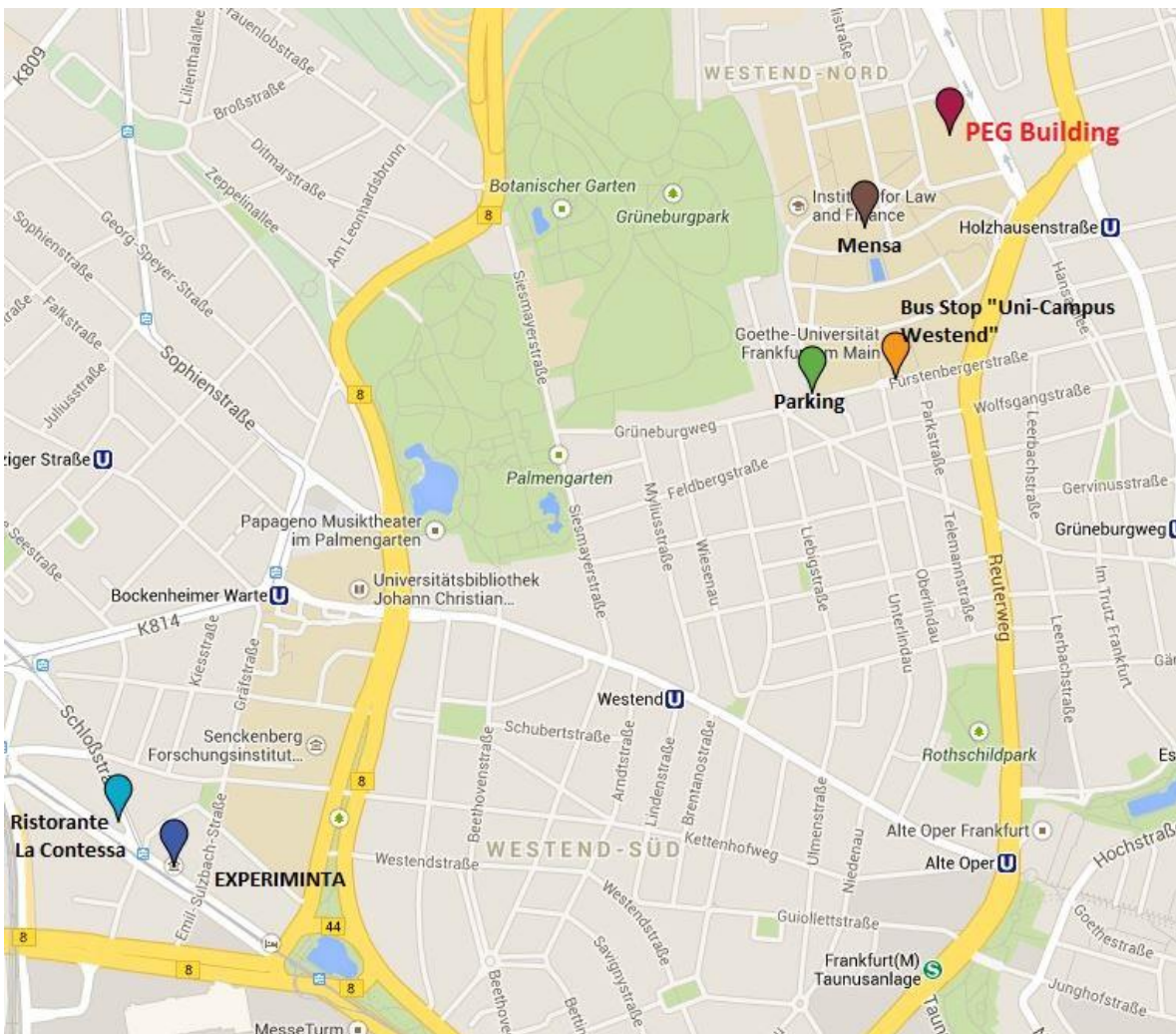
⇒ You come by car? Mail us (info@big-data-spp.de) the license plate number of your car in order to grant you access to the university parking area.

⇒ You cannot find us? Call us: 0163 / 90 67 498 (Andrei Negoescu)

Other locations

Experiminta (Social Event on Tuesday) - Hamburger Allee 22-24; 60486 Frankfurt am Main

Ristorante La Contessa (Dinner on Tuesday) - Schloßstraße 126; 60486 Frankfurt am Main



Program

Monday, 29.09.

Opening

13:15 Registration

14:00 Welcome Address

14:15 Invited Talk

Michael Goodrich (University of California, Irvine, USA)

Invertible Bloom Lookup Tables and Their Applications in Large-Scale Data Analysis

15:15 Coffee Break

Session 1

15:40 Richard Stotz (TU München): *Energy-Efficient Scheduling*

16:10 Friedhelm Meyer auf der Heide (Uni Paderborn): *Distributed Data Streams in Dynamic Environments*

16:40 Matthias Mnich (Uni Bonn): *Kernelization for Big Data*

17:10 Coffee Break

17:30 Business Meeting

Tuesday, 30.09.

Session 2

09:30 Hannah Bast (Uni Freiburg): *Efficient Semantic Search on Big Data*

10:00 Florian Kurpicz (TU Dortmund): *Massive Text Indices*

10:30 Ulrich Meyer (Uni Frankfurt/M.): *Dynamic, Approximate, and Online Methods for Big Data*

11:00 Coffee Break

Session 3

11:30 Arno Mittelbach (TU Darmstadt): *Security-Preserving Operations on Big Data*

12:00 Dennis Hofheinz (KIT Karlsruhe): *Scalable Cryptography*

12:30 Lunch Break

Session 4

14:00 Sören Laue (Uni Jena): *Scaling Up Generic Optimization*

14:30 Henning Meyerhenke (KIT Karlsruhe): *Fast Inexact Combinatorial and Algebraic Solvers for Massive Networks*

15:00 Coffee Break

Session 5

15:30 Oliver Koch (TU Dortmund): *Graph-Based Methods for Rational Drug Design*

16:00 Anand Srivastav (Uni Kiel): *Algorithmic Foundation of Genom-Assembly*

Social Event and Dinner

16:30 Break (possibility to return to your hotel)

18:00 Science Museum Experimenta

20:00 Dinner at Ristorante La Contessa (Schloßstraße 126; 60486 Frankfurt am Main)

Wednesday, 01.10.

Session 6

- 09:30 Ulrik Brandes (Uni Konstanz): *Skeleton-based Clustering in Big and Streaming Social Networks*
10:00 Jan Hackfeld (TU Berlin): *Competitive Exploration of Large Networks*
10:30 [Coffee Break](#)

Session 7

- 11:00 Martin Skutella (TU Berlin): *Algorithms for Solving Time-Dependent Routing Problems with Exponential Output Size*
11:30 Katharina Zweig (TU Kaiserslautern): *Local Identification of Central Nodes, Clusters, and Network Motifs in Very Large Complex Networks*
12:00 [Future Planning / Closing Remarks](#)

Invited Talk

Michael Goodrich (University of California, Irvine, USA)

Invertible Bloom Lookup Tables and Their Applications in Large-Scale Data Analysis

Abstract:

We discuss an extension of the Bloom filter data structure that supports not only the insertion, deletion, and lookup of key-value pairs, but also allows a complete listing of the pairs it contains with high probability, as long the number of key-value pairs is below a designed threshold. Our structure allows the number of key-value pairs to greatly exceed this threshold during normal operation. Exceeding the threshold simply temporarily prevents content listing and reduces the probability of a successful lookup. If entries are later deleted to return the structure below the threshold, everything again functions appropriately. We also show that simple variations of our structure are robust to certain standard errors, such as the deletion of a key without a corresponding insertion or the insertion of two distinct values for a key. The properties of our structure make it suitable for several applications in large-scale data analysis, including database and networking set reconciliation applications that we highlight.