<table>
<thead>
<tr>
<th>Hardware</th>
<th>CPU/GPU/ASIC, Memory, NVM, Disks – poss. virtualised</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low-level API</td>
<td>Parallel Processing: Eigen, OpenMP, OpenCL, Vector-Compiler, SIMD...</td>
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<tr>
<td>Mid-level API</td>
<td>Distributed Processing: MPI, RPC, RDMA ...</td>
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<tr>
<td>High-level API</td>
<td>Parallel Programming: TensorFlow, Spark, Hadoop...</td>
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<tr>
<td>Programming</td>
<td>Declarative/Expressive Lang: Python, C++, Java, Scala, Apache pig Spark SQL...</td>
</tr>
<tr>
<td>Application</td>
<td>Physics/Biology Apps, Commercial Apps, Social media analysis</td>
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</tbody>
</table>
09:45 - 10:30 Applications (High Performance Data Analytics)
09:45 - 10:15 Juha Jaykka (Univ. Cambridge COSMOS Intel Parallel Computing Centre): Advantages and disadvantages of modern parallel computing
10:15 - 10:30 Discussion

10:30 - 11:15 System Architecture I (HPC)
10:30 - 11:00 Christophe Dubach (Univ. Edinburgh): Lift: a Data-Parallel Language for High-Performance Parallel Pattern Code Generation
11:00 - 11:15 Discussion

11:15 - 11:30 Coffee Break

11:30 - 12:15 System Architecture II (Scheduling)
11:30 - 12:00 Daniel Goodman (Oracle Labs): Fine-grained parallel work scheduling in scale-up graph analytics
12:00 - 12:15 Discussion

12:15 - 13:00 Lunch

13:00 - 14:30 System Architecture III (Distributed Computing/Memory Management)
13:00 - 13:30 Aleksandar Dragojevic (Microsoft Research Cambridge): FaRM: a platform for low-latency computing
13:30 - 13:45 Sam Ainsworth (Univ. Cambridge): Graph Prefetching Using Data Structure Knowledge
13:45 - 14:15 Rajeev Raman (Univ. Leicester): In-memory memory processing of big data via succinct data structures
14:15 - 14:30 Discussion

14:30 - 14:45 Coffee Break

14:45 - 16:00 Heterogeneous Cores (Optimisation in Stream Processing and Neural Networks)
14:45 - 15:10 Alexandros Koliousis (Imperial College London): SABER: Window-Based Hybrid Stream Processing for Heterogeneous Architectures
15:10 - 15:30 Valentin Dalibard (Univ. Cambridge): Modern Systems for Neural Networks
15:30 - 16:00 Discussion

16:00 - 16:30 Discussion of future vision of data processing stack from hardware, low-level programming, parallel programming platform, to applications

16:30 - 17:30 Closing + wine