Thesis Opportunities at DIMA

Theses in the DIMA Group are often tied to ongoing research projects sponsored by (inter-)national funding agencies and are commonly written in English (and some in German). Problems are typically centered on topics in database systems as well as scalable and distributed data management, including:

- benchmarking and performance evaluation,
- data visualization,
- data warehousing, OLAP, SQL Analytics,
- database monitoring and tuning,
- database security, privacy, access control,
- databases for emerging hardware,
- data systems and data management for machine learning,
- distributed and parallel databases,
- graph data management, RDF, social networks,
- knowledge discovery, clustering, data mining,
- machine learning for data management and data systems,
- query processing and optimization,
- spatio-temporal databases,
- storage, indexing, and physical database design,
- streams, sensor networks, complex event processing,
- transaction processing,
- very large data science applications/pipelines.

To pursue a thesis with us, students are generally required to possess:

- outstanding programming skills in C++, Java, or Scala,
- extensive knowledge in database systems (e.g., IBM DB2, Oracle) or big data analytics systems (e.g., Flink, Spark),
- basic knowledge in the use of an IDE (e.g., Eclipse, IntelliJ),
- basic knowledge in the use of a distributed version control system (e.g., SVN, Git).

Furthermore, to conduct a:

- Bachelor’s thesis, students must have successfully completed ISDA and DBPRA (at a minimum) with a grade of good or better and possibly several other Bachelor’s courses offered by DIMA, such as DBPRO, DBSEM, or DW.
- Master’s thesis, students must have successfully completed DBT and IDBPRA (at a minimum) with a grade of good or better and possibly several other Master’s courses offered by DIMA, such as AIM-2, AIM-3, BDAPRO, BDASEM, MHD, or ROC.

Moreover, depending on the thesis topic, additional knowledge may be required (e.g., compiler technology, distributed systems, machine learning).

Note: The list of Bachelor’s and Master’s Thesis Topics offered at DIMA is currently being updated. It will be made available for download in the near future. In the meantime, a representative list of thesis topics is here: https://www.dima.tu-berlin.de/menue/theses/open_theses_topics/.

Students should complete and forward the Thesis Request Form (as well as the DIMA Thesis Proposal Template [both available on the DIMA website], if they would like to propose their own thesis topic) to juan dot soto at tu-berlin dot de. Upon review, a short 15’ appointment will be arranged.