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.