



DMIF, University of Udine

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# Data Management for Big Data – Part I

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Andrea Brunello, Postdoctoral Researcher at the University of Udine, and member of the Data Science and Automatic Verification Laboratory <https://datasciencelab.dimi.uniud.it/>

My research interests are in the fields of Explainable AI, Machine Learning applied to Healthcare / Virtual Sensing / Indoor Positioning and, broadly speaking, Data Science.

Currently we have many thesis proposals available, so take a look at our website!



We are going to spend 24 hours together, partitioned into 6, 4-hour lectures.

We are going to talk about these topics:

- Databases and DBMSs
- Entity-Relationship model
- Relational model
- Database design: normalization
- Structured Query Language (SQL)
- Concurrency and transactions, storage and indexing

Materials are available at

<https://github.com/dslab-uniud/teaching/>



- Part II: distributed systems (24h), held by Dr. Dario Della Monica
- Part III: introduction to Big Data (24h), held by Dr. Andrea Brunello



- For some lectures of the first part, we are going to see “live” examples of what we learn → better if you could bring your own laptop
- As for the exam, it consists of a written part, possibly followed by an oral test
- Tools we are going to use:
  - *ChronoGeoGraph*, to design Entity-Relationship diagrams:  
[https://github.com/dslab-uniud/teaching/blob/main/courses/Data%20Management%20for%20Big%20Data/2021-2022/ChronoGeoGraph\\_Wrapped.jar](https://github.com/dslab-uniud/teaching/blob/main/courses/Data%20Management%20for%20Big%20Data/2021-2022/ChronoGeoGraph_Wrapped.jar)
  - *Postgres & PgAdmin*, to perform SQL queries:  
<https://www.postgresql.org/download/>
- Book: *Database System Concepts*, 7th Edition, A. Silberschatz, H. F. Korth, S. Sudarshan