

Very Small DataBases

From 2003 to 2006 I have been involved in research about Very Small DataBases (VSDB).

- My graduation thesis: Portable DBMS: a physically independent Data Access Layer.
- PoLiDBMS: Design and Prototype Implementation of a DBMS for Portable Devices, a paper I co-authored, published in Proceedings di Dodicesimo Convegno Nazionale sui Sistemi Evoluti per Basi di Dati, S. Margherita di Pula, I, pp. 71-76, 2004. We created a DBMS in Java from scratch, targeted to portable and embedded devices, like smart cards or handhelds using flash memory: I dealt with the design and implementation of low-level interactions between the DBMS core and the storage media, which involved exploring JNI, format conversions, and other related topics. I also participated in defining the full DBMS architecture.
- We also implemented in MIPS assembler several efficient data access policies targeted to flash memory. I was in charge of creating a testing environment, programming standard, and set of basic functions with an useable API for the actual policy routines: it has been a fulfilling work, which involved hacking with SPIM, m4, and a number of other weird tools and languages.
- I have been co-advisor of Marco Fortunato's Thesis about the application of VSDB methodology to a real-world scenario.
- Technical reports:
 - Politecnico di Milano - DEI - Technical Report 2003.45: Curino, Giani, Giorgetta, Giusti, Trincavelli: MIPS implementation of some very small databases data structures.
 - Politecnico di Milano - DEI - Technical Report 2003.46: Curino, Giorgetta, Giusti, Miele: Portable light DBMS: PoLiDBMS white paper. [Read more at the Very Small DataBases page](#)