



B/S

SSD stress relief

SSDs are becoming the go-to hardware for storage. Unlike HDDs, a number of algorithmic problems with SSDs are not well-understood. One issue is wear-leveling: writing to an SSD cell causes it to deteriorate, and wear-leveling is about spreading the stress caused by write accesses to the SSD evenly over its capacity.

For this thesis, the goal is to compare theoretically optimal algorithms for wear-leveling with heuristics present in the literature. For worst-case input, the optimal algorithms will clearly perform no worse than any heuristic, but what about typical scenarios found in a production environment? Are there some environments where the heuristics win?



We have some ideas of what we are interested in, and if you get creative and try out your own ideas as well, all the better!

Figure 1: This is the kind of balance your SSD needs.

Requirements:

- In this thesis, you will write code.
- You should be able to work independently on this topic.

Interested? If you are interested, we will be happy to hear from you and to have a small chat.

Contacts

- Georg Bachmeier: georg.bachmeier@tik.ee.ethz.ch, ETZ G94