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## - Bachelor/Master Thesis -

### **Finding similarities between different binary file types**

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#### **Motivation**

Traditional / cryptographic hash functions are widely spread and used for different cases (e.g. file identification, hash tables in databases, ...). Due to their security properties (e.g. the avalanche effect) they have one main drawback: one changing bit in the input changes approximately 50% of the hash value. Therefore these hash functions cannot be used to identify similar files. A similarity preserving hash function aka *fuzzy hash function* should overcome this drawback and map similar inputs to similar hash values.

#### **Task**

Binaries (\*.exe, \*.dll) are very common file types for Windows. But while an update (e.g. change some lines of code) and recompiling it, the binary code looks completely different. The aim of this thesis to create a prototype / algorithm that can identify similarities between binaries wherefore in a first step an comprehensive literature survey is necessary. More details can be discussed at the first meeting or by email.

#### **Requirements**

- ⤴ High motivation, creativity and ability to work independently
- ⤴ Good communication skills
- ⤴ Good programming skills (favored C/C++)
- ⤴ Knowledge of hash functions and assembler is a plus
- ⤴ Very good knowledge of German or English

#### **Start date**

- ⤴ Immediately
- ⤴ Flexible working hours and home office possible

#### **Contact**

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