

# Maurice Bailieu

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## Research Interests

My research interests lie in the broad area of computer systems, including distributed, dependable systems, operating systems, trusted computing and storage systems.

## Education

- 01/18 - today **PhD Research Student**, *The University of Edinburgh*, UK  
Specialization in System Architecture, especially trusted cloud storage  
Advisor: Prof. Dr.-Ing. Pramod Bhatotia
- 09/17 **Diplom in Computer Science**, *TU Dresden*, Germany  
Specialization in operating systems  
Diplom thesis: Byte-granular memory mapping with CHERI and L4Re.  
Advisor: Prof. Dr. rer. nat. Hermann Härtig

## Experience

- 05/22 - 08/22 **Research Intern**, *Microsoft Research*, Cambridge, UK  
Rollback protected confidential writable storage.  
Researching and designing a block level storage system which provides rollback protection for confidential containers. Additionally, exploring the possibility to lift the protection from the block storage layer into a file system layer for increased performance.
- 10/15 - 03/16 **Research Associate**, *HP Labs*, Palo Alto, USA  
Persistent Capabilities for L4/Fiasco.OC  
Researching the use of kernel capabilities for NVM, in particular using L4/Fiasco.OC capabilities to manage NVM. Also exploring the possibilities to use capabilities over multiple nodes to mediate access to shared resources.
- 04/14 - 12/14 **Research Assistant**, *TU Dresden*, Germany  
Implementing, testing and evaluating different checksum methods for IPC in Fiasco.OC and L4Re.

## Teaching

- 03/22 - today **Teaching Assistant**, *TU Munich*, Germany  
Cloud Lab
- 03/21 - today **Teaching Assistant**, *TU Munich*, Germany  
Advanced System Programming in C/Rust
- 11/18 - 12/19 **Teaching Assistant**, *The University of Edinburgh*, UK  
Extreme Computing

## Publications

- 06/22 **Treaty: Secure Distributed Transactions**, *IEEE/IFIP DSN'22*, Baltimore, USA  
Dimitra Giantsidi, Maurice Bailieu, Natacha Crooks and Pramod Bhatotia  
Code available: <https://github.com/TUM-DSE/Treaty>

- 07/21 **Avocado: A Secure In-Memory Distributed Storage System**, *USENIX ATC'21*, Online Event/Santa Clara, USA  
Maurice Bailleu, Dimitra Giantsidi, Vasilis Gavrielatos, Do Le Quoc, Vijay Nagarajan and Pramod Bhatotia  
Code available: <https://github.com/mbailleu/avocado>
- 06/19 **TEE-Perf: A Profiler for Trusted Execution Environments**, *IEEE/IFIP DSN'19*, Portland, USA  
Maurice Bailleu, Donald Dragoti, Pramod Bhatotia and Christof Fetzer  
Code available: <https://github.com/mbailleu/tee-perf>
- 02/19 **SPEICHER: Securing LSM-based Key-Value Stores using Shielded Execution**, *USENIX FAST'19*, Boston, USA  
Maurice Bailleu, Jörg Thalheim, Pramod Bhatotia, Christof Fetzer, Michio Honda and Kapil Vaswani
- 11/17 **Interoperable capabilities**, *Patent: US20170329526A1*  
Reto Achermann, Maurice Bailleu, Dejan S. Milojicic and Gabriel Parmer

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## Talks

- 07/21 **USENIX ATC'21**, *Online Event/Santa Clara*, USA, Conference Talk  
Avocado: A Secure In-Memory Distributed Storage System
- 12/19 **Huawei Workshop**, *Shanghai*, China, Poster session
- 06/19 **Intel Labs**, *Hillsboro*, USA, Project Presentation  
SPEICHER: Securing LSM-based Key-Value Stores using Shielded Execution
- 06/19 **IEEE/IFIP DSN'19**, *Portland*, USA, Conference Talk  
TEE-Perf: A Profiler for Trusted Execution Environment
- 02/19 **USENIX FAST'19**, *Boston*, USA, Conference Talk  
SPEICHER: Securing LSM-based Key-Value Stores using Shielded Execution

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## Awards

- 10/21 **2021-2022 Microsoft Research PhD Fellowship**
- 06/19 **Travel grant for DSN'19**

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## References

**Prof. Dr.-Ing. Pramod Bhatotia**  
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