

Maurice Bailleu

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 title: Byte-granular memory mapping with CHERI and L4Re.
Advisor: Prof. Dr. rer. nat. Hermann Härtig

Experience

- 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

- 03/21 - today **Teaching Assistant**, *TU Munich*, Germany.
Advanced System Programming
- 11/18 - 12/19 **Teaching Assistant**, *The University of Edinburgh*, UK.
Extreme Computing

Publications

- 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*.
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

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

Awards

10/21 **2021-2022 Microsoft Research PhD Fellowship**.

06/19 **Travel grant for DSN'19**.

Skills

Languages C, C++, C#, Java, Python, Assembly

OS/System programming Linux, Fiasco.OC, L4Re, DPDK, SPDK

Hardware NVMe, Network cards, SGX, CHERI, MIPS

Compiler gcc, clang, llvm

Virtualization Docker, qemu

Other openssl, eRPC, gdb, perf, rocksdb, SCONE

References

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