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: 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 possiblities 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

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 Bailleu, Natacha Crooks and Pramod Bhatotia

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

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github.com/mbailleu

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

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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Kapil Vaswani
Microsoft Research Cambridge
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Natacha Crooks
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