Matthias Hille

M.Sc. Computer Science

✉ *matthias.hille@tu-dresden.de*
www.hille-matthias.de

Education

09/2015–present **PhD student in Computer Science**, TU Dresden

10/2012–07/2015 **Master in Computer Science**, TU Dresden

10/2009–10/2012 **Bachelor in Computer Science**, TU Dresden

Work Experience

01/2021–present **Research Fellow**, TU Dresden, Germany
- Design and implementation of a capability system for disaggregated data centers
- Invetisgation of capability system scalability in a microkernel applied in Function-as-a-Service environments

01/2020–12/2020 **PhD Intern**, Huawei Dresden Research Center, Germany

09/2015–12/2019 **Research Fellow**, TU Dresden, Germany
- Investigation of operating system scalability techniques focusing on microkernels using capabilities
- Modeling and verification of algorithms for distributed capability systems

10/2013–03/2014 **Research Assistent**, TU Dresden, Germany
- Integrating an operator placement algorithm into a database system (MonetDB) targeting GPGPU integration

07/2013–09/2013 **IBM Extreme Blue summer internship**, IBM Germany Research & Development GmbH, Germany
- Integrating a new hypervisor and associated storage infrastructure into an OpenStack cloud

03/2010–05/2012 **Research Assistant**, TU Dresden, Germany
- Developing an administrative system for the Dresden Senior's Academy

Publications

EuroSys'22 **Slashing the disaggregation tax in heterogeneous data centers with FractOS**, Lluís Vilanova, Lina Maudlej, Shai Bergman, Till Miemietz, Matthias Hille, Nils Asmussen, Michael Roitzsch, Hermann Härtig, Mark Silberstein, In *Proceedings of the Seventeenth European Conference on Computer Systems*

APSys'20 **A heterogeneous microkernel OS for Rack-Scale systems**, Matthias Hille, Nils Asmussen, Hermann Härtig, Pramod Bhatotia, In *Proceedings of 11th ACM SIGOPS Asia-Pacific Workshop on Systems*

USENIX ATC'19 **SemperOS: A distributed capability system**, Matthias Hille, Nils Asmussen, Pramod Bhatotia, Hermann Härtig, In *Proceedings of the 2017 USENIX Conference on Usenix Annual Technical Conference*

SIGMOD'14 **Demonstrating efficient query processing in heterogeneous environments**, Tomas Karnagel, Matthias Hille, Mario Ludwig, Dirk Habich,Wolfgang Lehner, Max Heimel, Volker Markl, In *Proceedings of the 2014 ACM SIGMOD international conference on Management of data*

Talks

USENIX ATC'19 **Conference Talk**, SemperOS: A distributed capability system

APSys'20 **Workshop Talk**, A heterogeneous microkernel OS for Rack-Scale systems

Supervised Student Thesis

2020 **Diploma Thesis**, RDMA-Based Access to NVMe Storage with Fine-Grained Access Control, *Till Miemietz*, TU Dresden

Skills

Languages	German: Native language
	English: fluent in spoken and written English
Programming:	C/C++, OpenCL, CUDA, MPI, Pyhton, Java