Mia Reitz

CV

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Skills

- **Strongest Skills**: Deep diving into complicated problems, coordinating projects, and clear communication
- **Programming Languages**: C/C++, Java, Python, Lua, PHP, Pawn, Squirrel, Bash, JavaScript, SQL, and others
- **Programming Systems**: OpenMP, MPI, CUDA, OpenGL
- **Operating Systems/Tools**: Linux, Android, Windows, Git, Gnuplot, LaTeX, Unity

Education

2019–today **Ph.D. in Parallel Programming**, *University of Kassel, Germany*
Dissertation: Load Balancing and Fault Tolerance for Asynchronous Many-Task Programs

2018–2019 **Master in Computer Science**, *University of Kassel, Germany*
Thesis: Design and Evaluation of a Work Stealing-Based Fault Tolerance Scheme for Task Pools

2014–2018 **Bachelor in Computer Science**, *University of Kassel, Germany*
Thesis: An Asynchronous Backup Scheme Tracking Work-Stealing for Reduction-Based Task Pools

2011–2013 **Highschool**, *Reichspräsident-Friedrich-Ebert-Schule, Fritzlar, Germany*
Specialization: Information Technology

Experience

2019–2024 **Research Assistant**, *University of Kassel, Germany, Research Group Programming Languages/Methodology*
Teaching and Researching as a PhD Candidate

2019 **Student Assistant**, *University of Kassel, Germany, Research Group Programming Languages/Methodology*
Assisting with scientific publications

2018 **Part time in IT**, *Hospital zum Hl. Geist gGmbH, Fritzlar, Germany*
Administrating Linux servers; Maintaining and updating IGEL thin clients; Extending a photo transfer software I wrote for the hospital in the past; Helpdesk support on first- and second level; Installing a new intranet web platform

2018 **Internship in IT**, *Hospital zum Hl. Geist gGmbH, Fritzlar, Germany*
Three months as requirement for my bachelor's degree

2015–2018 **Student Assistant**, *University of Kassel, Germany, Research Group Programming Languages/Methodology*
Grading of student homework, Assisting with the DFG research project "Fehlertoleranz und Ressourcen-Elastizität für globale Taskpools" and assisting publications beginning from 2017

2015 **Self-employed**, *Development and running a web platform for renting holiday houses*

2011–2012 **Internship in IT**, *Hospital zum Hl. Geist gGmbH, Fritzlar, Germany*
One year as part of highschool; Development of a photo transfer software for IGEL thin clients, and plugins to control HP switches from the helpdesk web platform GLPI

Publications

submitted **M. Reitz, J. Hundhausen, and C. Fohry**, *Fail-stop Failure Protection for Coordinated Work Stealing of Tasks that Communicate through Futures; Workshop on Asynchronous Many-Task Systems and Applications (WAMTA)*

submitted **M. Reitz**, *Load Balancing and Fault Tolerance for Asynchronous Many-Task Programs; University of Kassel, Germany,* ***Dissertation***

2024 **M. Reitz, B. Gerhards, J. Hundhausen, and C. Fohry**, *Investigating the Performance Difference of Task Communication via Side Effects; International European Conference on Parallel and Distributed Computing (EuroPar), Workshop on Asynchronous Many-Task Systems for Exascale (AMTE)*

2024 **M. Reitz and C. Fohry**, *Task-Level Checkpointing and Localized Recovery to Tolerate Permanent Node Failures for Nested Fork-Join Programs in Clusters; Springer Nature Computer Science (SNCS) (Special Issue)*

2023 **M. Reitz and C. Fohry**, *Task-Level Checkpointing for Nested Fork-Join Programs using Work Stealing; International European Conference on Parallel and Distributed Computing (EuroPar), Workshop on Asynchronous Many-Task Systems for Exascale (AMTE)*

2023 **M. Reitz, K. Hardenbicker, T. Werner, and C. Fohry**, *Lifeline-based Load Balancing Schemes for Asynchronous Many-Task Runtimes in Clusters; Parallel Computing (PARCO) (Special Issue), Vol. 116*

2022 **M. Reitz, K. Hardenbicker, and C. Fohry**, *Comparison of Load Balancing Schemes for Asynchronous Many-Task Runtimes; International Conference On Parallel Processing and Applied Mathematics (PPAM), Workshop on Language Based Parallel Programming (WLPP)*

2022 **J. Posner, M. Reitz, and C. Fohry**, *Task-Level Resilience: Checkpointing vs. Supervision; International Journal of Networking and Computing (IJNC) (Special Issue), Seiten 47–72*

2021 **M. Reitz**, *Load Balancing Policies for Nested Fork-Join;* ***Poster****. Extended abstract in Proceedings IEEE International Conference on Cluster Computing (CLUSTER)*

2021 **M. Reitz**, *Task-Level Checkpointing for Nested Fork-Join Programs;* ***Poster****. PhD Forum International Parallel and Distributed Processing Symposium (IPDPS), Seiten 817–818*

2021 **J. Posner, M. Reitz, and C. Fohry**, *Checkpointing vs. Supervision Resilience Approaches for Dynamic Independent Tasks; IEEE International Parallel and Distributed Processing Symposium, Workshop on Advances in Parallel and Distributed Computational Models (APDCM)), Seiten 556–565*

2019 **J. Posner, M. Reitz, and C. Fohry**, *A Comparison of Application-Level Fault Tolerance Schemes for Task Pools; Future Generation Computer Systems (FGCS) (Special Issue), Seiten 119–134*

2018 **J. Posner, M. Reitz, and C. Fohry**, *Comparison of the HPC and Big Data Java Libraries Spark, PCJ and APGAS; Supercomputing, Parallel Applications Workshop (PAW-ATM), Seiten 11–22*

2018 **C. Fohry, J. Posner, and M. Reitz**, *A Selective and Incremental Backup Scheme for Task Pools; Int. Conf. on High Performance Computing & Simulation (HPCS), Seiten 621–628*

Teaching

Lectures and Exercise Sessions

2023 **Introduction to Parallel Processing**, *Lecturing students about programming GPUs using OpenMP*

2023 **Seminar: Current State and Trends in High Performance Computing**, *Leading the seminar*

2022 **Algorithms and Data Structures**, *Preparing homework for students and leading two weekly exercise sessions*

2022 **Introduction to Parallel Processing**, *Lecturing students about programming GPUs using OpenMP*

2022 **Introduction to Computer Science**, *Preparing homework for students and leading two weekly exercise sessions*

2021 **Algorithms and Data Structures**, *Preparing homework for students and leading all exercise sessions*

2021 **Seminar: Task-based Parallel Programing Systems**, *Leading the seminar*

2021 **Introduction to Parallel Processing**, *Lecturing students about programming GPUs using CUDA*

2021 **Introduction to Computer Science**, *Leading one weekly exercise session*

2020 **Algorithms and Data Structures**, *Preparing homework for students and leading all exercise sessions*

Supervised Master Theses

2024 **Integration of the Asynchronous Many-Task Runtime Itoyori into the Benchmark Suite TaskBench**

Supervised Bachelor Theses

2023 **Comparison of Randomized vs. Lifeline-based Cooperative Work Stealing with Nested Fork-Join Programs**

2023 **Comparison of Randomized vs. Lifeline-based Cooperative Work Stealing with Independent Tasks**

2022 **Coordinated Work Stealing in the Parallel Programming Environment GLB**

2022 **Parallel Evaluation of Neural Networks using Task-based Parallel Programming**

2022 **Integration of the Parallel Programming Environment GLB into the Benchmark Suite TaskBench**

2022 **Locality-optimized Work-Stealing for Task-based Parallel Programming Environments in Clusters**

2021 **Logging and Visualization of Runtime Behaviour of Distributed Taskpools**

Supervised Master Projects

2023 **Design and Implementation of a Preprocessor for an experimental Parallel Programming System**

2023 **Comparison between Randomized vs. Lifeline-based Coordinated Work-Stealing**

Supervised Bachelor Projects

2023 **Implementation of Parallel Backtracking in Distributed Memory in the Programming Language Julia**

2022 **Implementation and Comparison of Current SplitQueue Variants with Java Concurrent Queues**

2022 **Implementation of Nbody-Simulation as a Benchmark for a Task-based Parallel Programming Environment**

2022 **Assessment of the RDMA-based Serialization-free Networking library Naos**

Service to Profession

2024 **Journal of Parallel and Distributed Computing (JPDC)**, *Invited Reviewer*

2024 **Supercomputing Conference (SC24)**, *Lead Student Volunteer*, Atlanta, USA

2023 **Supercomputing Conference (SC23)**, *Student Volunteer*, Denver, USA

2022 **Supercomputing Conference (SC22)**, *Student Volunteer*, Dallas, USA

2021 **Supercomputing Conference (SC21)**, *Student Volunteer*, St. Louis, USA (Hybrid-Virtual)

2020 **Supercomputing Conference (SC20)**, *Student Volunteer*, Virtual

2019 **Supercomputing Conference (SC19)**, *Student Volunteer*, Denver, USA

External funding

2023-2024 **Lichtenberg Cluster Darmstadt**, *accepted project proposal granting 360000 core hours*, title: Fault Tolerance and Locality-Aware Work Stealing for Dynamically Generated Dependent Tasks on Clusters

2020-2024 (annually) **Goethe Cluster Frankfurt**, *accepted project proposal granting 300000 core hours*, title: Fehlertoleranz und Ressourcen-Elastizität für APGAS-Taskpools

Languages

German	Native
English	Fluent
Japanese	Good (JLPT N2 certified)
French	Beginner

Mia Reitz
Kassel, Germany December 12, 2024