

Ronny Brendel

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automaton2000.com

Work Experience

- 2019–today **NVIDIA**
Senior System Software Engineer
- 2018–today **CppCon Program Committee**
- 2017–2018 **Oak Ridge National Laboratory**
Research Associate
- Research and application of advanced software performance analysis to enable leadership-class applications on Titan, one the then-fastest HPC systems in the world, and its successor Summit (POWER9+NVIDIA Volta)
- GPU Hackathon Mentor, and tutorial lead on various performance tools
- Publications: *Generic Library Interception for Improved Performance Measurement and Insight*, *Visual Comparison of Trace Files in Vampir*, and *An LLVM Instrumentation Plug-in for Score-P*
- 2015–2016 **TU Dresden**, Center for Information Services and High Performance Computing
Research Associate
- Advancing software performance analysis for highly parallel applications. Goals:
- Furthering comparative analysis
 - Advances towards online visualization, instead of post-mortem analysis
- Publications: *Structural Clustering: A New Approach to Support Performance Analysis at Scale* and *Edge Bundling for Visualizing Communication Behavior*
- 2012–2013 **TU Dresden**, Chair for Algebraic and Logical Foundations of Computer Science
Student Assistant
- Instructor for two exercises: *Theoretische Informatik und Logik*, and *Advanced Logic*
- Development, modeling and quantitative model checking of novel synchronization algorithms
- 2007–2012 **TU Dresden**, Center for Information Services and High Performance Computing
Computer Scientist
- Development of an architecture for analysing highly parallel programs – *Vampir* – vampir.eu
- Assistance in organizing and coordinating the development process
- Core developer of *Open Trace Format*
- Contributions to *VampirTrace*, and multiple small projects
- Publications: *Introducing the Open Trace Format (OTF)*, *Memory Allocation Tracing with VampirTrace*, and *Trace File Comparison with a Hierarchical Sequence Alignment Algorithm*

Education

- 2015 Diplom-Informatiker (equivalent to Master's degree in Computer Science), TU Dresden
Minor subject: Discrete Mathematics, Algebra & Geometry
- 2013 Semester abroad, Vienna UT
- 2007 Computer Scientist Specialized in Application Development (formal training), TU Dresden
- 2004 Abitur (equivalent to A-level), Franziskaner grammar school, Meißen
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Technical Skills

- Languages: C, (Modern) C++, Bash, Python, Go, Java, Haskell, Lisp, and many more
- Libraries: Qt, STL, OpenMP, Message Passing Interface, Google Test
- Tools: Linux, Vim, Git, Windows, Visual Studio, numerous *nix tools, Valgrind, various performance analysis tools, GitHub, L^AT_EX, TikZ
- Topics: High Performance Computing, Software Performance Analysis, Formal Methods, Algorithms, API-, UI design
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Interests & Activities

- Modern C++, software performance analysis, discrete mathematics, becoming a better developer
- Personal programming projects: github.com/hydro
- I solved over 175 mathematical programming problems: projecteuler.net/profile/hydro.png
- Recreation: running, reading, gaming, IT- and business news
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Languages

- German (native), English (full professional proficiency)