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`time0o.github.io`

WORK EXPERIENCE

Leica Geosystems, Heerbrugg: Software Engineer   **Sep 2021 – Now**
- Part of the firmware team for the BLK2GO mobile lidar scanner
- Working on embedded Linux/Android and hardware accelerated data processing
- Improving automated testing and deployment workflows

Center for Advancing Electronics, Dresden: Student Assistant   **Sep 2020 – Dec 2020**
- Wrote mpsym, a fast C++/Python library which uses algorithms from computational group theory to find and represent symmetries in multicore SoCs

Kernkonzept GmbH, Dresden: Software Engineering Intern   **Jun 2019 – Oct 2019**
- Developed a guest debugger extension for the uvmm hypervisor using C++

ZEISS Corporate Research and Technology, Jena: R & D Intern   **Aug 2018 – Dec 2018**
- Worked with agile team on defect detection machine learning research project
- Used Python for data acquisition/analysis and training of neural networks

Kernkonzept GmbH, Dresden: Student Employee   **Sep 2017 – Jul 2018**
- Implemented features and tests for the L4Re operating system using C++
- Created a Lua tool for verification of L4Re startup scripts
- Improved analysis of benchmark data with custom Python library

Center for Advancing Electronics, Dresden: Student Assistant   **Feb 2017 – Sep 2017**
- Developed a Linux backend for a distributed computing framework using C

SONOTEC GmbH, Halle (Saale): R & D Intern   **Feb 2016 – Sep 2016**
- Developed IMU position estimation algorithms with MATLAB
- Built and programmed ARM microcontroller based hardware prototype boards

EDUCATION

TU Dresden: Diplom (B.Sc. + M.Sc.) Inf. Syst. Engineering, Final Grade 1.0   **Oct 2016 – Jul 2021**
KTH Stockholm: Exchange Studies in Electrical Engineering and Computer Science **Jan 2019 – Jun 2019**
TU Dresden: Undergraduate Studies in Electrical Engineering   **Oct 2014 – Oct 2016**
Fördegymnasium Flensburg: Abitur (High School Diploma), Final Grade 1.0   **Aug 2005 – Jun 2014**

PROJECTS (complete list at `https://time0o.github.io/#projects`)

CPPBind: `https://github.com/Time0o/CPPBind`
- An extensible Clang-based program for automatically generating language bindings to C++
- Used to create C/Rust/Lua bindings to the L4Re microkernel's IPC interface

l4re-pong: `https://github.com/Time0o/l4re-pong`
- The classic "Pong" game on the L4Re microkernel

z80-verilog: `https://github.com/Time0o/z80-verilog`
- A Verilog implementation of a Z80 compatible processor architecture

TECHNICAL SKILLS

- Programming Languages: C, C++, Python, Haskell, Lua, Bash, Verilog
- Tools and Technologies: Linux, L4Re, Git, Make, CMake

PUBLICATIONS

- A. Goens, T. Nicolai and J. Castrillon, "mpsym: Improving Design-Space Exploration of Clustered Many-cores with Arbitrary Topologies," in IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems, doi: 10.1109/TCAD.2021.3102512.

AWARDS

- Enno-Heidebroek certificate for academic achievement
- Hermann-Willkomm prize for best final thesis, awarded for "A Compiler-Based IDL Framework for L4Re"

LANGUAGES

- German: native, English: fluent

REFERENCES

Available on request