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WORK EXPERIENCE

Leica Geosystems, St. Gallen: Software Engineer **Sep 2020 – Now**
- Part of the firmware team for the BLK2GO mobile lidar scanner
- Responsible for feature development and maintenance using C++17/20
- Working on low level Android programming and hardware accelerated data processing
- Improving automated testing and deployment workflows

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 tests for the L4Re operating system using C++ and Google Test
- 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.) Information 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

MPSym: Map Tasks to Multicore Systems: `github.com/mpsym`
- Uses computational group theory to efficiently map tasks to cores
- Implemented in C++ with bindings to Python

CPPBind: Generate C++ Bindings: `github.com/Time0o/CPPBind`
- Uses Clang's LibTooling library to generate C and Lua bindings to C++ code
- Extensible to new languages via a Python API

Deep Colorization of Grayscale Images: `github.com/Time0o/colorful-colorization`
- From scratch PyTorch implementation based on paper by Zhang et al.
- Includes preprocessing and training scripts for new datasets

TECHNICAL SKILLS

- Programming Languages: C, C++, Python, Haskell, Lua, Bash, Assembly, Verilog
- Tools and Technologies: Linux, 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