Nationality: German
Location: Zug, Switzerland

Timo Nicolai

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WORK EXPERIENCE

Gapfruit, Zug: Operating Systems Engineer **Sep 2022 – Now**
- Working on the Genode-based Gapfruit microkernel OS in C++
- Leading development of the uspclient component used to remotely provision and monitor a large number of IoT devices via the USP protocol

Leica Geosystems, Heerbrugg: Software Engineer **Sep 2021 – Aug 2022**
- Part of the firmware team for the BLK2GO and BLK247 lidar scanners
- Worked on embedded Linux and hardware accelerated data processing in C++
- Improved automated testing and deployment workflows

Kernkonzept, 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, Dresden: Student Employee **Sep 2017 – Jul 2018**
- Implemented features and tests for the L4Re operating system using C++

EDUCATION

TU Dresden: Diplom (BSc + MSc) Inf. Syst. Engineering **Oct 2016 – Jul 2021**
- Focus on embedded systems and AI, final grade 1.0 (best possible)
- Exchange studies in computer science at KTH Stockholm

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

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

BuenzliCoin: A Proof of Work Cryptocurrency: `https://github.com/Time0o/BuenzliCoin`
- Implements distributed consensus, mining, transactions and wallets
- Written from scratch in C++

TECHNICAL SKILLS

- Programming Languages: C, C++, Python, Haskell, Lua, Bash, Verilog
- Tools and Technologies: Linux, L4Re, Genode, 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”