

Carsten Bruns

Ph.D. student in Computer Science at INRIA

Academics

- since Oct.2018 **Ph.D. “Performance optimization of parallel and sequential C++ applications”**, *KAIROS team at INRIA / I3S lab of UNS (Nice, France)*, Supervisor: Prof. Sid Touati
Methods to allow better optimization in compilation and execution of object-oriented (parallel) programs, to improve performance on modern multi-core architectures
- 2014 – 2017 **M.Sc. in Information Systems Technology**, *Technical University of Darmstadt (Germany)*, Average: 1.09 (on a scale from 1 to 5, ECTS equivalent: A)
Included advanced topics: Integrated circuit design, Communication networks and their security, Hardware synthesis, Parallel and reconfigurable computing, Computer graphics
- Nov.2016 – May 2017 **Master thesis**, *Secure Mobile Networking Lab (TU Darmstadt)*,
“Modification of LTE Firmwares on Smartphones”
Analyzed hardware and software of LTE modems in recent Smartphones, implemented a patching framework able to modify their firmware and realized example applications
- Sep.2015 – Dec.2015 **Exchange semester**, *University of British Columbia (Vancouver, Canada)*
- 2011 – 2014 **B.Sc. in Information Systems Technology**, *Technical University of Darmstadt (Germany)*, Average: 1.29 (ECTS equivalent: A)
Included advanced topics: Circuit design, Wireless sensor networks, Security of embedded systems, Computing systems and microprocessor design, Hardware description and synthesis
- Apr.2014 – Sep.2014 **Bachelor thesis**, *Department of Lighting Technology (TU Darmstadt)*,
“Development of a modular datalogger based on an FPGA”
Designed and implemented a flexible and extendable data logging platform using an FPGA

Work experience

- Jan.2018 – Jul.2018 **Firmware Engineer**, *HP Inc. (Barcelona, Spain)*
Implementation of security features preventing manipulations for large-format printers, from low-level communication with cryptography ICs up to the user interface
- Sep.2017 – Nov.2017 **Research associate**, *Secure Mobile Networking Lab (TU Darmstadt)*
Research on the firmware of LTE modems in recent Smartphones and modifications allowing to use the devices as a measurement platform
- Feb.2016 – Jan.2017 **Student employee**, *Department of Lighting Technology (TU Darmstadt)*
- Feb.2014 – Jul.2015 Assisted in project automation, especially responsible for the development of experiment setups including FPGAs or microcontroller systems
- Aug.2011 – Apr.2012 **Software developer**, *Self-employed work*
Implemented project management tools for companies, in cooperation with a project management advisor (Klaus Tumuscheit of *project'ing GmbH*)

Languages

- English C1 (TOEFL iBT 102/120)
German Native
French B1