

# Certificate

## Heinz Nixdorf Institute Paderborn University Software Engineering Group

### C++ Programming

Certification of successful participation



This is to certify that *Mr. Markus Sawatzki*, student of Computer Science, Paderborn University, Paderborn has successfully participated in the course “C++ Programming”, for the period from 17<sup>th</sup> October, 2016 to 31<sup>th</sup> March, 2017. The course is designed to give a comprehensive overview of the C++ programming language, covering the basics of the language as well as advanced techniques of modern C++ and how they can be used effectively in practice.

During the course, Mr. Sawatzki solved several complex programming exercises and successfully worked on an extensive final project. The main task of the final project was to implement an efficient version of the Smith-Waterman algorithm from the domain of bioinformatics, using shared memory parallelism.

Heinz Nixdorf Institut und  
Institut für Informatik  
Fachgebiet Softwaretechnik  
Zukunftsmeile 1  
33102 Paderborn

Paderborn, May 17, 2017

  
\_\_\_\_\_  
Philipp D. Schubert, M.Sc.