

NHR@FAU · Martensstraße 1 · 91058 Erlangen

Erlangen National High Performance Computing Center (NHR@FAU)

## **Training & Support**

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Erlangen, October 7, 2022

## **Certificate of Attendance**

This is to certify that Ali Darijani has attended the 3-day online course with hands-on exercises

"Modern C++ Software Design"

Lecturer: Dr. Klaus Iglberger

on October 5-7, 2022.

The course gave insight into the different aspects of C++ (object-oriented programming, functional programming, generic programming) and taught guidelines to develop mature, robust, maintainable, and efficient C++ code:

Conveyed concepts and skills:

- fundamental C++ programming concepts and idioms
- object-oriented and functional programming
- template-based programming
- design classes and class interfaces
- · good and bad parts of inheritance
- value-based design
- · capability of writing clean code.

Kind regards,

Georg Hager

Head of Training & Support, NHR@FAU

## Detailed topics:

- overview of the STL (iterators, algorithms, containers)
- · compiler generated functions
- copy elision
- object lifetimes
- RAII
- move semantics
- · proper handling of member data
- maintainability of classes
- · const correctness
- inheritance: good and bad parts, public inheritance
- · value semantics: from pointers to values
- surprises in object hierarchies.

