

Carsten Karbach

Wilhelmstrasse 8
52428 Jülich

+49 178 1432564

✉ carstenkarbach@gmx.de

📄 carstenkarbach.github.io



Personal data

date of birth 13th March, 1989
birthplace Heinsberg
nationality German

Qualification summary

Software Engineer with detailed knowledge of object oriented design, applied software architecture and design patterns. Technical lead of web application development team and contributing to international software projects. Development of distributed and platform-independent applications in multiple programming languages such as PHP, Java, JavaScript, C++ and C#. Hands-on experience with agile development, test automation, continuous integration and revision control. Master's degree in Technomathematics, combining applied mathematics and computer science, consecutive to the bachelor's degree in Scientific Programming coupled with a parallel apprenticeship.

Professional Experience

since 09/2012 **Software engineer**, *Forschungszentrum Jülich – Jülich Supercomputing Centre.*

web development Technical lead of web development team. Requirements analysis, design, project management, implementation and deployment of a PHP web application for submission and reviewing of scientific projects requesting compute time on supercomputers. Daily use of Apache, Composer, jQuery, relational databases, consuming and producing of REST-APIs. Jenkins server used for running unit and Selenium tests.

Human Brain Project Architecture, implementation, tests and maintenance of a REST-API for HPC account administration in context of the Human Brain Project. Import and synchronization of accounts into an LDAP database.

Parallel Tools Contributor for the IDE Eclipse Parallel Tools Platform (PTP) in Java. JUnit tests and design of XSD for data exchange. Presentations and tutorials on monitoring architecture and usage of PTP.

LLview Refactoring and extensions of cluster monitoring framework written in Perl. Adaptation and installation for in-house systems and external supercomputing centers. Setup of a continuous integration server.

visualization Evaluation of computer-generated holography as scientific visualization technique. Development of MPI- and OpenMP-parallelized applications generating holograms for performance and numerical analysis.

training Mentor for undergraduate students, internal development workshops. Setup of IDE, introduction to git, presentations on LLview/PTP.

09/2010–08/2012 Software engineer (part time), Forschungszentrum Jülich – Jülich Supercomputing Centre.

GUI development for PTP with Java. Implementation of LLview functionality as plug-in for Eclipse. Parsing XML-data of a monitored cluster and visualization with SWT.

Study

09/2010–08/2012 Master of Science in Technomathematics, Aachen University of Applied Sciences, Campus Jülich, Overall grade: very good.

combination of applied mathematics and computer science

courses Distributed systems, scientific visualization, software engineering, parallel algorithms, parallel system architectures, image processing, stochastics, operations research, computer mathematics

Master's thesis A highly configurable simulator for job schedulers on supercomputers

09/2007–08/2010 Bachelor of Science in Scientific Programming, Aachen University of Applied Sciences, Campus Jülich, Overall grade: very good.

Bachelor's thesis Design of a web interface for the supercomputer monitoring tool LLview

Professional Education

09/2007–08/2010 Mathematical and Technical Software Developer, Forschungszentrum Jülich – Jülich Supercomputing Centre, Overall grade: excellent.

Parallel professional education and study in Scientific Programming

Software Skills

general Unix, REST-APIs, DBMS, SQL, Apache, jQuery, Composer, Jenkins, Docker, Symfony, Silex, Android, XML, XSD, XSLT, JUnit, Selenium, MPI/OpenMP

tools git, Subversion, Eclipse, Unity, Android Studio, ssh, Ant, CMake, L^AT_EX, Xcode

programming PHP, Java, JavaScript, C++, C#, Perl, Objective-C
languages

Language Skills

German **native**

English **fluent**

Interests

mobile applications Development of mobile applications for Android. Release of an open source board game called MoTAC on Google Play. Game development with Unity and C#.

soccer Participation in company-internal soccer league

Jülich, February 1, 2019