

Julia Computing

Audience Course Julia Computing

The course [Julia](#) Computing is targeted at Big Data analysts and scientists who want to use Julia to analyze data and make static analyses.

Prerequisites Course Julia Computing

Experience with [programming](#) is beneficial to good understanding but is not required.

Realization Training Julia Computing

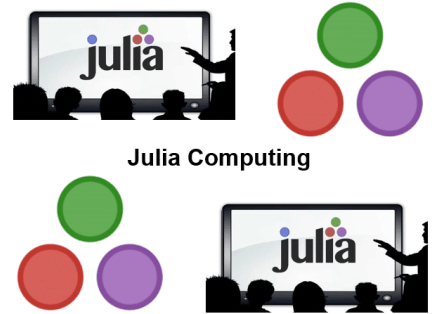
The theory is discussed on the basis of presentations and examples. The concepts are explained with demos. There is ample time to practice the theory yourself. [Juno](#) is used as a development environment. Course times are from 9:30 am to 16:30 pm.

Certification Course Julia Computing

After successful completion of the course, participants receive an official certificate Julia Computing.

Duration: 3 days

Price: € 2250

[Open Schedule](#)


Content Julia Computing

In the course Julia Computing from SpiralTrain the participants learn to program with the dynamic programming language Julia, which is widely used in scientific calculations and gives a very good performance. Like Python and R, Julia is used for statistical calculations and data analysis, but the execution speed of Julia is much better compared to Python and R. Julia is ideally suited for big data analysis and supports complex tasks such as cloud computing and parallel execution.

Julia Features

The course Julia Computing starts with an overview of Julia's JIT compiler and package installation and how Julia can also be run online with JuliaBox in combination with Jupyter notebooks. Also discussed are the main features of Julia such as Parallel Processing, Multiple Dispatch and Homoiconic Macros.

Julia Syntax

Then the Julia language is treated with variables, data types, operators, classes and objects and control flow structures. Composite data structures such as arrays, sets, dictionaries and matrices and operations on them such as generator expressions and broadcasting are also discussed.

Functions in Julia

Also part of the program of the course Julia Computing are functions in Julia. Functions with multiple inputs and outputs and variable argument lists are treated and as well as anonymous functions and higher order functions such as map and reduce.

Plotting with Julia

Naturally attention is also paid in the course Julia Computing to reading, processing and plotting data in Julia. Reading CSV and DLM files into DataFrames and making statistical calculations with the panda's library is covered. Data visualization with plot libraries such as Plotly and Bokeh is also treated.

Julia and Data

Then it is time to discuss how SQL and NoSQL databases can be accessed in Julia and how REST Services can be used to read JSON and XML data.

Julia's Interoperability

Finally the interoperability of Julia with other languages such as Fortran and C is on the schedule of the course Julia Computing and a number of advanced applications of Julia such as Cloud computing are discussed.

Modules Julia Computing

Module 1 : Julia Intro	Module 2 : Julia Language	Module 3 : Data Structures
Intro Julian World JIT Compiler Installing Julia JuliaBox Package Installation Role in Data Science Julia Features Parallel Processing Multiple Dispatch Homoiconic Macros Interlanguage Cooperation	Variables Data Types Number Systems Classes and Objects Object References Floating Points Flow Control Operators Strings String Interpolation Common String Functions	Arrays and Indexing Multiple Dimensions Generator Expressions Sorting Ellipsis Operator Sets Dictionaries Keys and Values Matrices Matrix Multiplication Broadcasting
Module 4 : Functions	Module 5 : Working with Data	Module 6 : Plotting
Defining Functions Parameter Passing Multiple Inputs Variable Argument Lists Multiple Outputs Anonymous Functions Map and Reduce Multiple Dispatches Operators as Functions Returning Functions	Stream and Text I/O Byte Array Streaming Reading Files Structured Data Sets CSV and DLM Files DataFrames RDataSets Statistics and Estimations Pandas Time Series	Data Visualization Plot as Object Plots Package Default Plot Behavior Decorating Plots SubPlots Graphic Engines Plotly Bokeh Images
Module 7 : Databases	Module 8 : Interoperability	Module 9 : Working with Julia
Database Interface ODBC and JDBC SQLite NoSQL Datastores Key Value Systems Document Datastores RESTful interfacing HTTP Verbs JSON and XML	Calling C and Fortran Julia API Calling API from C Metaprogramming Symbols Macros Error Handling Redirection and Pipes Parallel Operations	Networking Frequency Analysis Stochastic Simulations Bayesian Methods Optimization Problems JuliaWeb Group Cloud Services AWS Cloud Google Cloud