Parallel and Distributed Computing

Alberto Paoluzzi – Lecture 11 – Julia: Fast Function Calls

Wed 30-03-2022

Julia High Performance: Making Fast Function Calls

Chapter 4 from From: Sengupta, Avik. Julia High Performance: Optimizations, distributed computing, multithreading, and GPU programming with Julia 1.0 and beyond, 2nd Edition. Packt Publishing. Kindle Edition.

1. Fast Function Calls

Section 1

Fast Function Calls

Fast Function Calls

Fast Numbers As a numerical programming language, fast computations with numbers are central to everything we do in Julia.

In the previous chapters, we discussed how the Julia compiler and runtime perform across a wide range of code.

In this chapter, we will take a focused look at how the core numerical constructs are designed and implemented in Julia.

In this chapter, we will cover the following topics:

1. Numbers in Julia, their layout, and storage

Fast Function Calls

Fast Numbers As a numerical programming language, fast computations with numbers are central to everything we do in Julia.

In the previous chapters, we discussed how the Julia compiler and runtime perform across a wide range of code.

In this chapter, we will take a focused look at how the core numerical constructs are designed and implemented in Julia.

In this chapter, we will cover the following topics:

1. Numbers in Julia, their layout, and storage
2. Trading performance for accuracy

Fast Function Calls

Fast Numbers As a numerical programming language, fast computations with numbers are central to everything we do in Julia.

In the previous chapters, we discussed how the Julia compiler and runtime perform across a wide range of code.

In this chapter, we will take a focused look at how the core numerical constructs are designed and implemented in Julia.

In this chapter, we will cover the following topics:

1. Numbers in Julia, their layout, and storage
2. Trading performance for accuracy
3. Subnormal numbers

Making Fast Function Calls

Chapter 4:

1. Using globals

Making Fast Function Calls

Chapter 4:

1. Using globals
2. Inlining

Making Fast Function Calls

Chapter 4:

1. Using globals
2. Inlining
3. Using macros for performance

Making Fast Function Calls

Chapter 4:

1. Using globals
2. Inlining
3. Using macros for performance
4. Generated functions

Making Fast Function Calls

Chapter 4:

1. Using globals
2. Inlining
3. Using macros for performance
4. Generated functions
5. Summary