قطب علمی سیستم‌های پیچیده و ماده چگال

سمینار هفتگی ماده چگال نرم

@numba.jit()
The MAGIC SPELL

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Abstract

Numba is an open-source JIT compiler that translates a subset of Python and NumPy into fast machine code using LLVM, via the llvmlite Python package. It offers a range of options for parallelising Python code for CPUs and GPUs, often with only minor code changes. Numba-compiled numerical algorithms in Python can approach or even exeed the speeds of C or FORTRAN. You don't need to replace the Python interpreter, run a separate compilation step, or even have a C/C++ compiler installed. Just apply one of the Numba decorators to your Python function, and Numba does the rest. Numba is a just-in-time compiler for Python that works best on code that uses NumPy arrays and functions, and loops. The most common way to use Numba is through its collection of decorators that can be applied to your functions to instruct Numba to compile them. When a call is made to a Numba decorated function, it is compiled to machine code “just-in-time” for execution and all or part of your code can subsequently run at native machine code speed! Numba was started by Travis Oliphant in 2012 and has since been under active development at https://github.com/numba/numba with frequent releases. The project is driven by developers at Anaconda, Inc., with support by DARPA, the Gordon and Betty Moore Foundation, Intel, nvidia and AMD, and a community of contributors on GitHub.

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