IAP.S096 (class for credit)

Performance Computing in a High Level Language
Professors Steven G. Johnson &Alan Edelman
Tues-Fri 2–4pm in room 2-135 (Jan 9–26, 2018)

MIT Massachusetts Institute of Technology

This course bridges the gap between traditional high-level computer languages, such as Python and Matlab, and what is really happening at a low level in the computer.

julia

Using a new language, Julia, we show how one can simultaneously write high-level, generic, interactive programs that are nonetheless optimized for performance, and which implement their own "inner loops", without relying on external libraries.

Topics include:

- **Representation of objects in memory**
- **Processor architectures**
- **Memory locality**
- **Metaprogramming**
- **Run time vs compile time**
- **Parallel computing**
- **Machine learning**