Compilers Track

PhD qualifying examination

Below is the reading list for the compiler track. Students taking the Breadth exam in Compilers are required to take CS 426 (or equivalent). Students taking the Depth exam in Compilers are required to take CS 426 (or equivalent) and CS 526.

All ACM conference and journal papers are available free to UIUC students and staff from the ACM Digital Library. To access the ACM Digital Library from an off-campus computer, please use the University's library proxy service:

(http://dl.acm.org.proxy2.library.illinois.edu/dl.cfm?coll=portal&dl=ACM)

For some of the topics, we recommend reading one or several book chapters instead of a paper; for others, we advise that in addition to the paper in this list you refer to a book chapter or section, where you might find a more clear explanation.

Below is the list of books that you might need.

ON RESERVE at GRAINGER LIBRARY: The Dragon Book and Keith Cooper's book "Engineering a Compiler" are on reserve in Grainger Library for CS 426 and CS 526.


AVAILABLE ONLY FROM THE COMPILER FACULTY AND ASSISTANTS: We have made the readings below available from any one of the following faculty or their faculty assistant: Professor Vikram Adve (4235 Siebel Center) or Faculty Assistant Tierra McCurry (4120 Siebel Center); Professors Maria Garzaran (4308 Siebel Center), David Padua (4227 Siebel Center), or Faculty Assistant Sherry Unkraut (4229 Siebel Center).


CORE

1) Data Dependences: Michael Wolfe. "High-Performance Compilers for Parallel Computing", Chapters 5 and 9, Published by Addison-Wesley, 1995. (See above for availability)


SPECIALIZATION

Internal Organization


Data Flow Analysis


SSA


Interprocedural Analysis


Pointer analysis


Vectorization


Program Synthesis


Dynamic Analysis


Native Code Generation


Correctness

