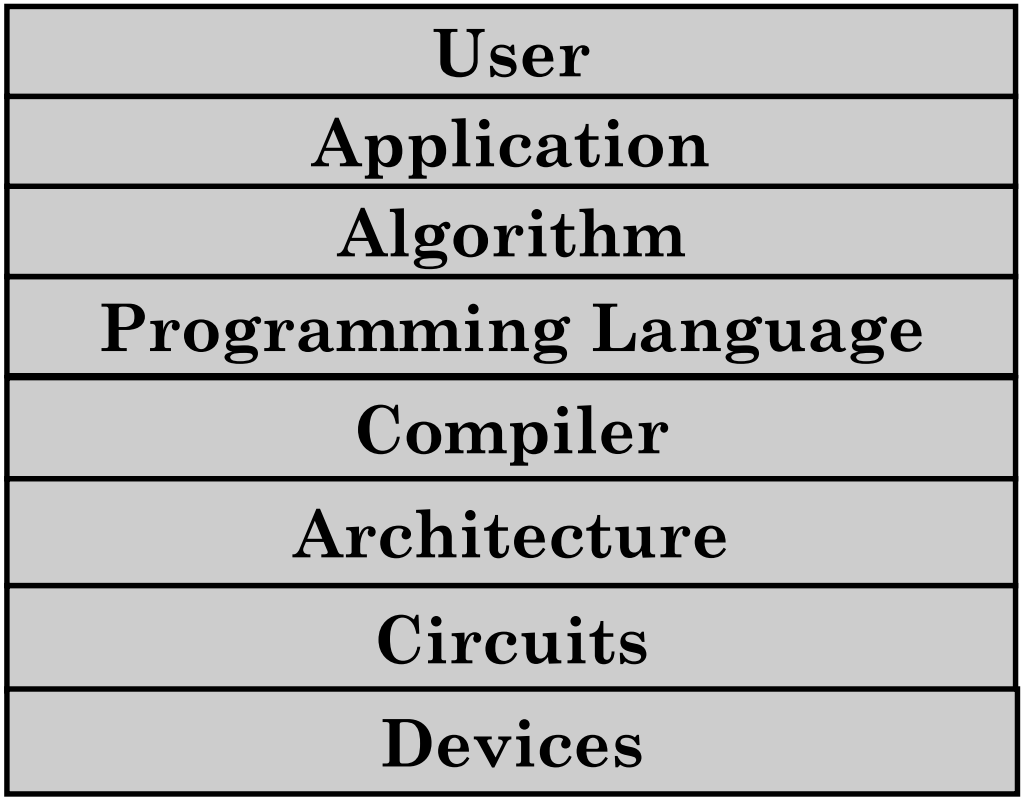
Overview of Computer Architecture course

Software Stack



Credit: A. Sampson and others

Course contents

- Instruction set architecture
- Architecture and performance
- Arithmetic operations in processors
- Enhancing performance with pipelining
- Memory subsystem -cache and virtual memory

Overview/Logistics

- Instructor: Sparsh Mittal (sparsh@iith.ac.in)
- Website: http://www.iith.ac.in/~sparsh/
- Register on Google Classroom.
- 20% penalty for late homework per day, incl. weekend
- Zero tolerance for cheating

“Office hours”

- After the class, I will be available for QA for few minutes
- Send your questions by email, I will respond to them by the end of the week
- Office hour (at least) every alternate week

Attendance policy

- Attendance is mandatory
- Marks you lose (out of total 100 marks in the course) for a given number of absences:
  0 or 1 absence: no marks lost.
  2 absence: 0.5 marks
  3 absence: 1 mark
  4 absence: 2 marks
  5 absence: 3 marks
  6 absence: 4 marks
  7 absence: 5 marks
  .....

Compensating for Attendance Marks

- An exercise will be given to cover-up attendance marks
- You need to do this exercise only if you lost attendance marks.
- If you did not lose attendance marks and attempt this exercise, you do not get any bonus marks.
- Also, if you lost marks but don't want to make up for them, you don't need to attempt this exercise.

Some features of this course

- Some HWs will have bonus marks for using latex
- Extra questions in the exam for bonus marks
- Topics requiring memorization will be covered only in homeworks, not in exams
- We will discuss the relevance of many concepts to deep-learning.

Reference book

- For most lectures, slides are sufficient
- For pipelining, and processor design, we will use:

Computer Organisation & Architecture by S. R. Sarangi

- For further study: Hennessy, John L., and David A. Patterson. *Computer architecture: a quantitative approach*. Fifth Edition, Elsevier, 2011. Find here