CS230: Digital Logic Design and Computer Architecture

Introduction

https://www.cse.iitb.ac.in/~biswa/courses/CS230/main.html

https://www.cse.iitb.ac.in/~biswa/

Phones (smart/non-smart) on silence plz, Thanks

Instructor

Biswa

Research Group: CASPER (https://casper-iitb.github.io/)

Research interests: Architecture performance/security

Office hours

Where: CC 217

When: Before and after the labs (1:30 PM to 5:30 PM)

Email: [CS230] in the subject line

Assessment Policies: CS230

- Option-I

Three Exams: Best of two   (2 X 35) = 70 points

10 SAFE quizzes: (10 X 2) = 20 points

Something different: = 10 points

Exams: Sept./Oct./Nov.

Coffee/Chai points

Answer a question or ask a question or

Provide honest feedback that can help the course

10 coffee points = 1 day extension in lab assignments

Real coffee with Biswa if you do not want to redeem your points.

Do inform Biswa "just" after the lectures

- Is it for real? Some pics from previous sem.

Attendance Policy (Either attend/!attend)

Do not make it fuzzy, do come on time else ditch it

✓ CS230: NO, but SAFE quizzes, so be SAFE!

🚫 CS232: Strict attendance policy

👷 Feel free to come (!come), I would be happy if you attend all. I would request ...

👨‍🏫 but I can understand, lectures can be boring ☹ too, do mention it whenever you feel like

Course means grades and grades are....
So we will take care, you take care of learning and earn your grades

CS230

Slides won't contain all

Attend lectures, take notes, ask questions,

Feel free to pause me if I go fast/slow/boring/engaging

CS-232

? Tutorial/doubt/query sessions during labs itself.

Labs wont be: finish in 3-hour kinda, instead we will provide one/two/three weeks

More once TA assignment is done. Still waiting ☹

CS232

- Labs will be "work on your own as per your schedule" kinda

- Lab hours: Ask your queries

- Some labs will be group based (post October)

- Plan B, C, and D is also available.

TA Assignment and all coming up

- Lab submissions will be on BodhiTree
- 1st lab on August 8. Be there on time.

CS230+232

Let's have a dialogue and not monologue

Questions on Assessment

Join Piazza ASAP

All notifications on Piazza ONLY

Bodhitree: For Assignment submissions

Academic Stress

- Stop using smart-phones (smart devices) or reduce it by k hours

- Smart devices are making us …………

- Forget your JEE rank, past CPI etc Just focus on the courses, it is 2023

- Learn/study in groups

Academic dishonesty

Plz go through again:

https://www.iitb.ac.in/newacadhome/procedures201521July.pdf

https://www.iitb.ac.in/newacadhome/punishments201521July.pdf

Lecture Style

- Highly informal and interactive
- So, shout if you do not get any
- Do not assume you will get it later ☺
- Right time is NOW
- Get fully engaged 101% ☺
- My slides!= Me in class

Computer Architecture

Strategic time-out

- Once in 25 minutes ☺

For two minutes

CS230+232: Machine learning

Are you kidding me? Learning about machines ☺

Are you kidding me?

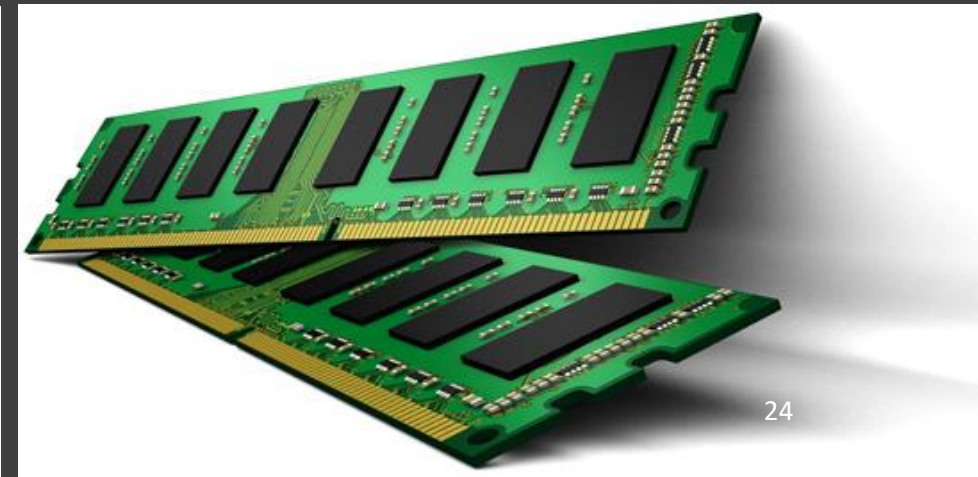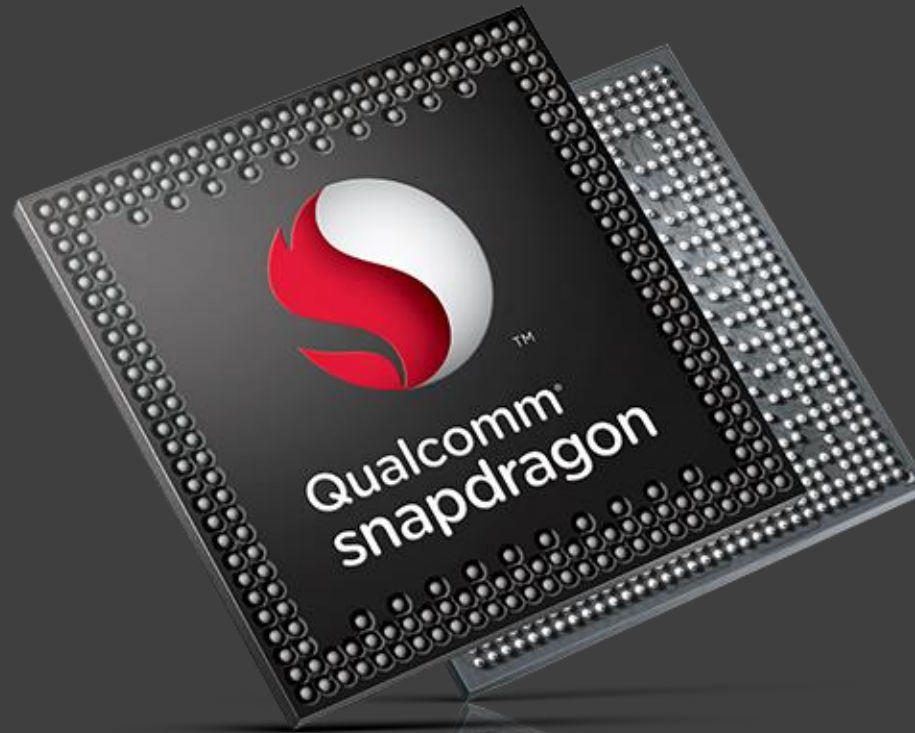# CS230+232: Machine learning

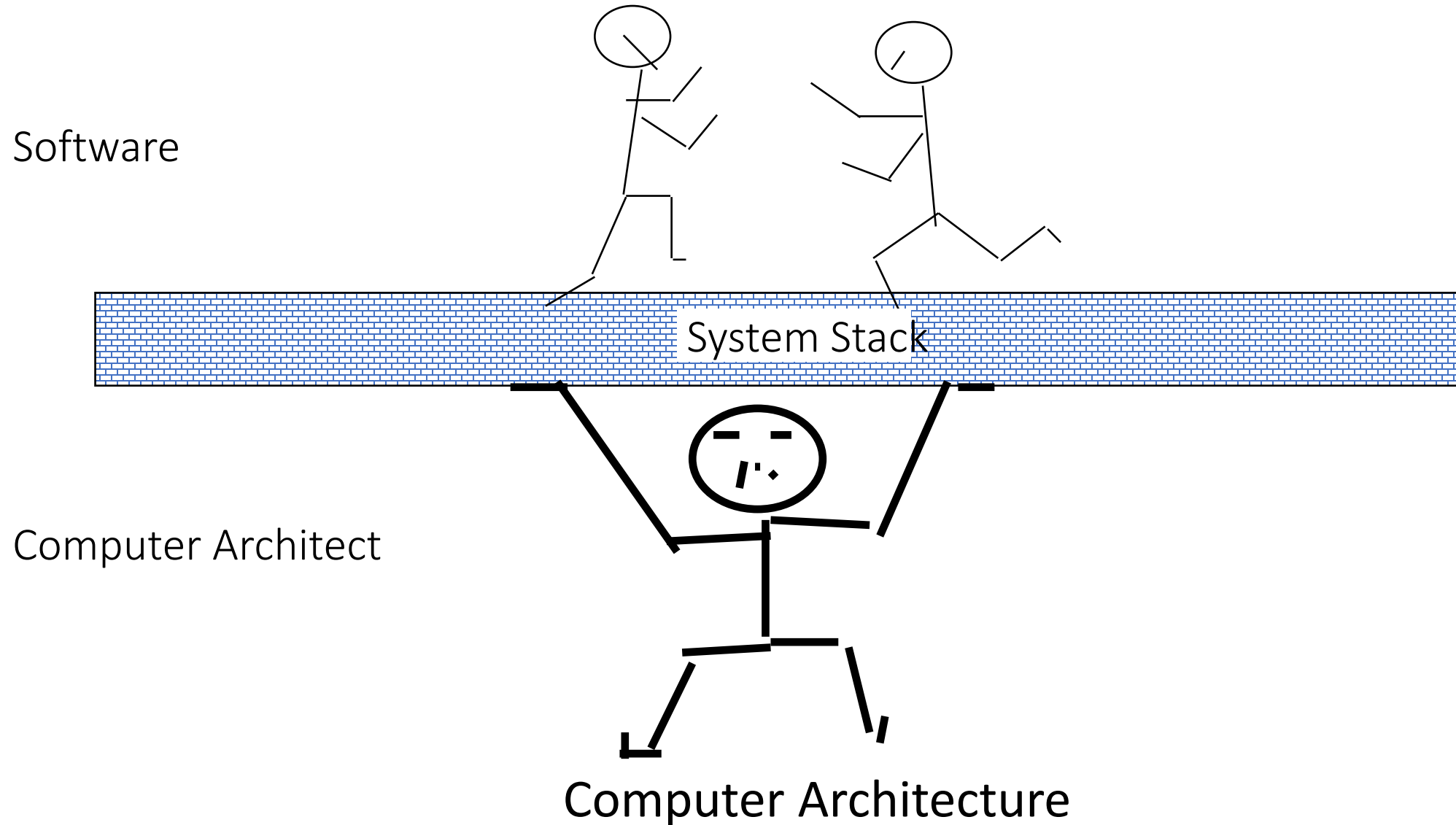# Digital Computers everywhere

Architecture everywhere ☺

CS230+CS232

Heavy Lifting

Software

System Stack

Computer Architect

Computer Architecture

AI/ML in 1980

🐝 Why All the buzz in 2020s?

🖥️ Computer architecture is the enabler!!

Problems

Algorithms

Programming Languages/Compilers

Operating/Database/Network Systems

Architecture
Digital gates (below that: electrons ☺)

Computing Stack

All THE major Software Companies are now ...

AWS Graviton Processor

Enabling the best price performance in Amazon EC2

Get Started with AWS Graviton-based EC2 Instances

https://www.ai-startups.org/top/hardware/

NEWS > COMPANY NEWS

Facebook Is Reportedly Building its Own Chip

November 17, 2020

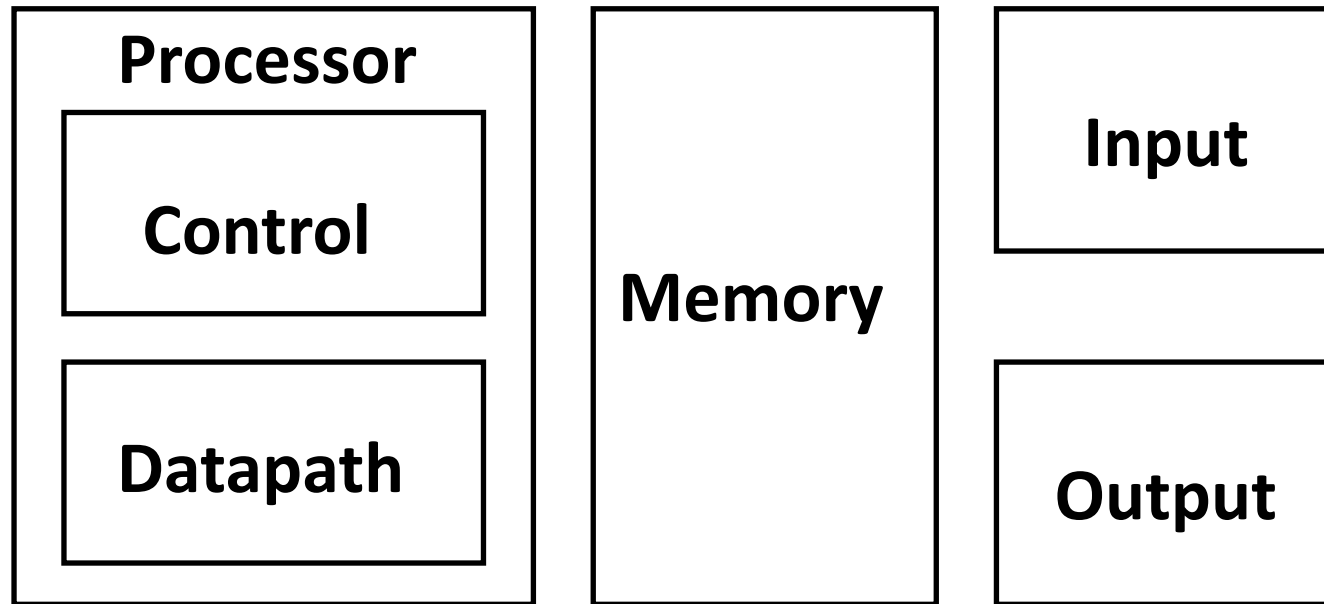Meet the Microsoft Pluton processor – The security chip designed for the future of Windows PCs

GOOGLE \ MOBILE \ TECH

Google is reportedly building its own processor for Pixels and Chromebooks

It could be used in Pixels as early as next year

Computer Architecture

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Let's get started

Since 1946 all computers have had 5 components

Coffee Credits

Pratik: +1

Tanishka: +1

Carpe Diem