

# COMPUTER ARCHITECTURE

## Introduction



# Personal information

- Assoc. Prof. Dr. Cuong Pham-Quoc (in Vietnamese Phạm Quốc Cường)
- Positions:
  - Lecturer of Computer Engineering Department
  - Vice dean, Faculty of Computer Science and Engineering, HCMUT
  - Adjunct Professor, University of Technology Sydney (UTS), Australia
- Education:
  - BEng: HCMUT/VN (Computer Engineering)
  - MEng: HCMUT/VN (Computer Science)
  - PhD: TU Delft/the Netherlands (Computer Engineering)
- Contact:
  - Email: cuongpham@hcmut.edu.vn
  - Homepage: [www.cse.hcmut.edu.vn/~cuongpham](http://www.cse.hcmut.edu.vn/~cuongpham)



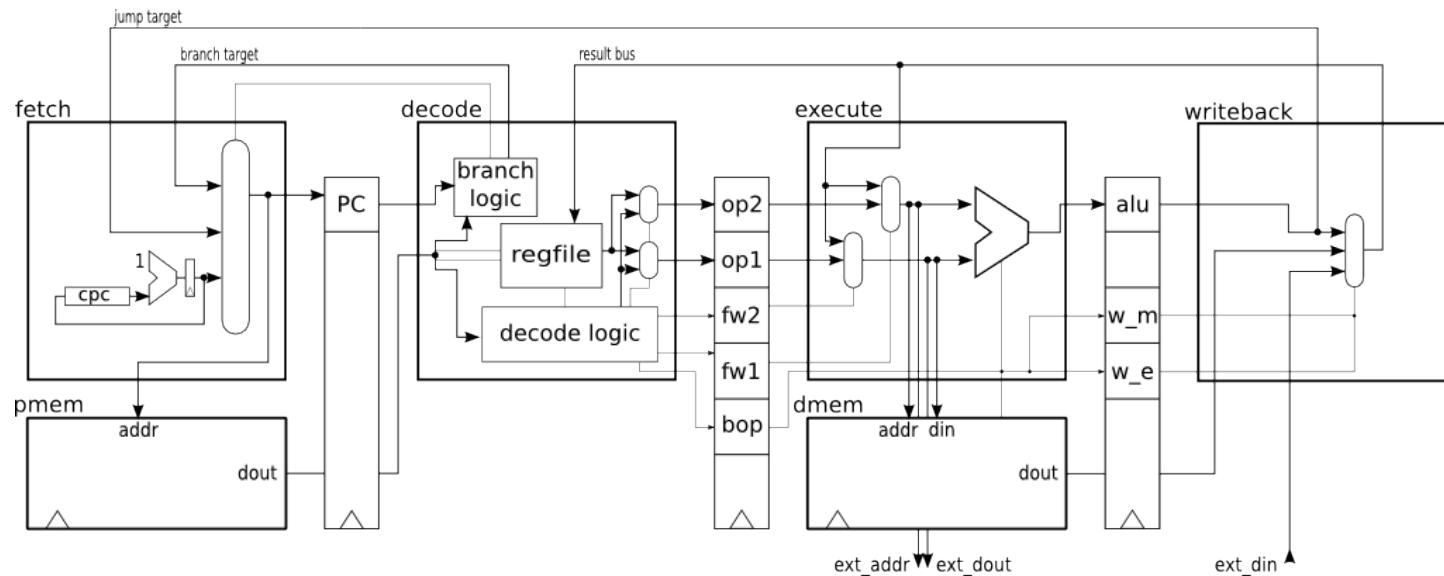
# Computer

- Q: What is a Computer?
  - A: “an **electronic machine** that is used for storing, organizing, and finding words, numbers, and pictures, for doing calculations, and for controlling other machines” – Cambridge dictionary
  - A: “a **general-purpose device** that can be programmed to carry out a set of arithmetic or logical operations automatically” - Wikipedia

Abacus

# Computer architecture

- Q: What is Computer Architecture?
  - A: “the **science** and **art** of selecting and interconnecting hardware components to create computers that meet **functional**, **performance** and **cost** goals” - WWW Computer Architecture Page



# The course

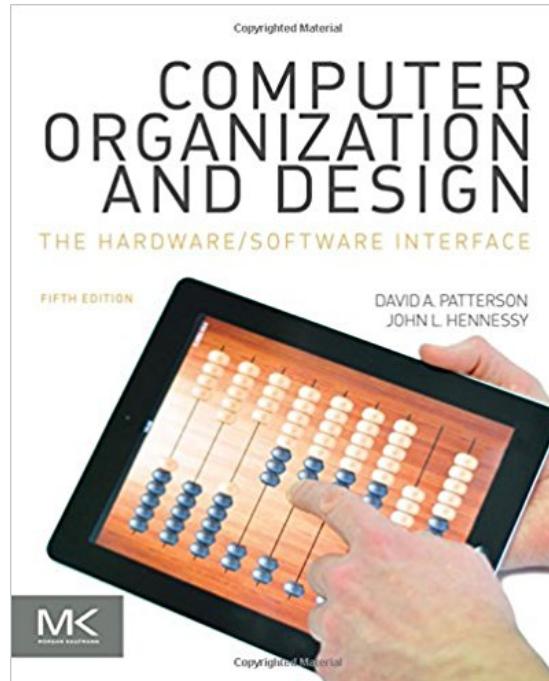
- Elementary course for **Computer Science/Engineering and related** programs
- Contents:
  - Performance evaluation
  - Instruction set architecture
  - Computer arithmetic
  - **Data-path and control signals**
  - Memory & I/O system
  - Multicores, Multiprocessors, and Clusters

# Outcomes

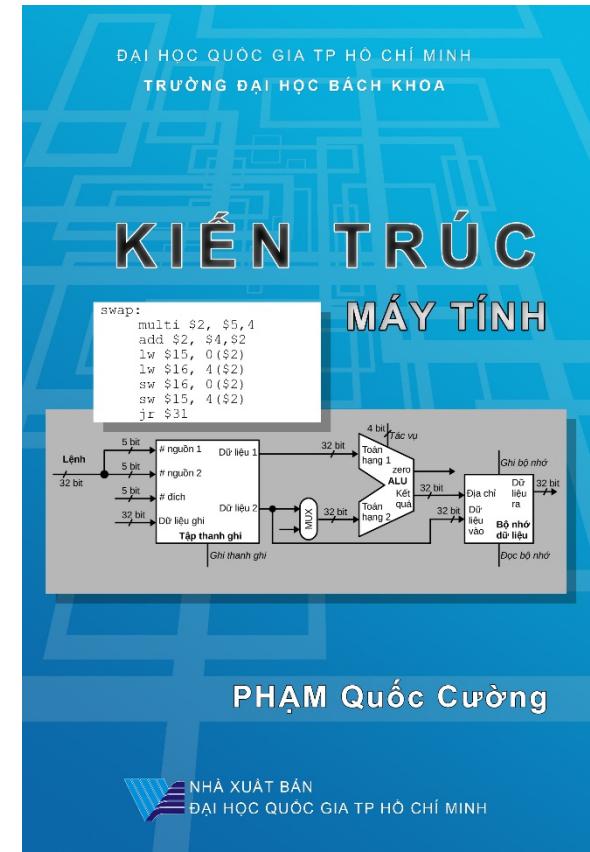
- Outcomes:
  - Understand the structure, organization of a computer system: the main components and the basic principles of its operations
  - Write and optimize small programs and fragments of codes to demonstrate an understanding of machine level operation

# Learning materials

- Slides/handouts
  - Blackboard
  - [www.cse.hcmut.edu.vn/~cuongpham](http://www.cse.hcmut.edu.vn/~cuongpham)
- Textbooks



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# Assessment

- Assignment/Quiz/Lab: 30%
- Mid-term: 30% – multiple choices
  - One A4 handwriting piece of paper (2 pages) is allowed during test
- Final exam: 40% – multiple choices
  - One A4 handwriting piece of paper (2 pages) is allowed during test

# In-class regulations



**handout**

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