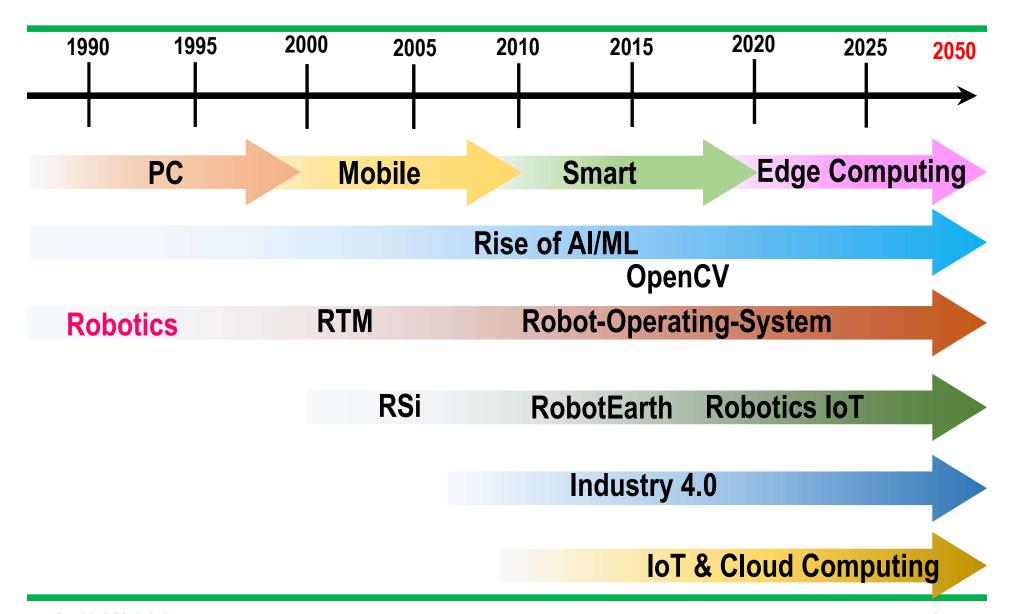# EL410: Introduction to Robotics

ICT Elective, Winter 2021

DA-IICT, Gandhinagar

Recent Trends in IT

Types of Robots

	Flying	Swimming	4+ Legged	2 Legged	4+ Wheeled	2 Wheeled	Arms	Head
Defense								
Industry								
Security								
Medical								
Transport								
Commercial								
Consumer								

Source: Sensors for Drone and Robots, March 2016, Yole Development

Quiz: What are the common components?

Personal Computer

https://pixabay.com/en/computer-desktop-modern-device-154114/
https://commons.wikimedia.org/wiki/File:Samsung-Galaxy-S7-Edge-Smartphone.jpg

Personal Phone

Hardware Components

Personal Computer

Personal Phone

Software Components

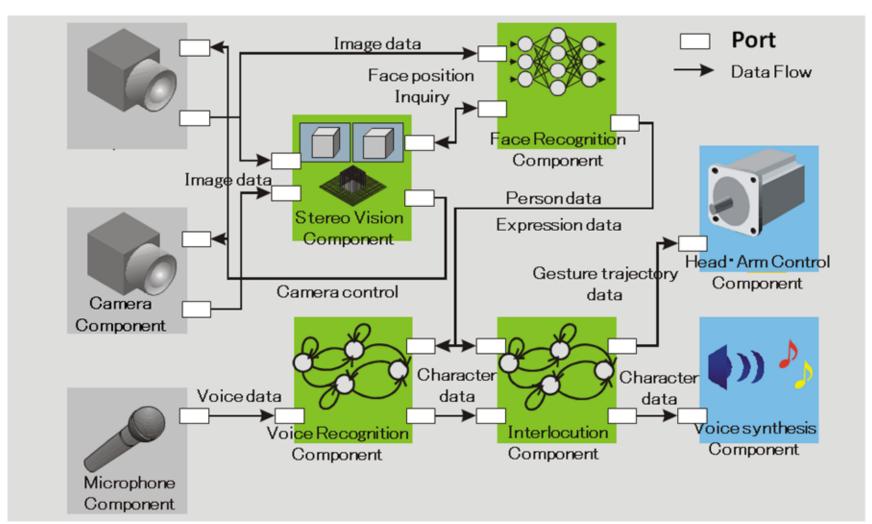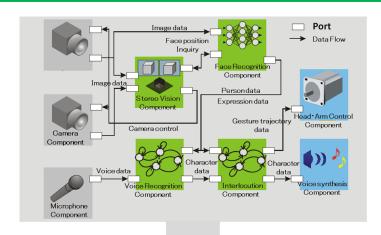**Personal Computer**

Personal Phone

Robotics Components

Resource: ROBOMECH, 2019, Hiroshima, Japan

High-Speed Robotic Computing

Software Based

- Slow: 5 min. for recognition 2 min. for actuation
- Less-Accuracy
- High-Power

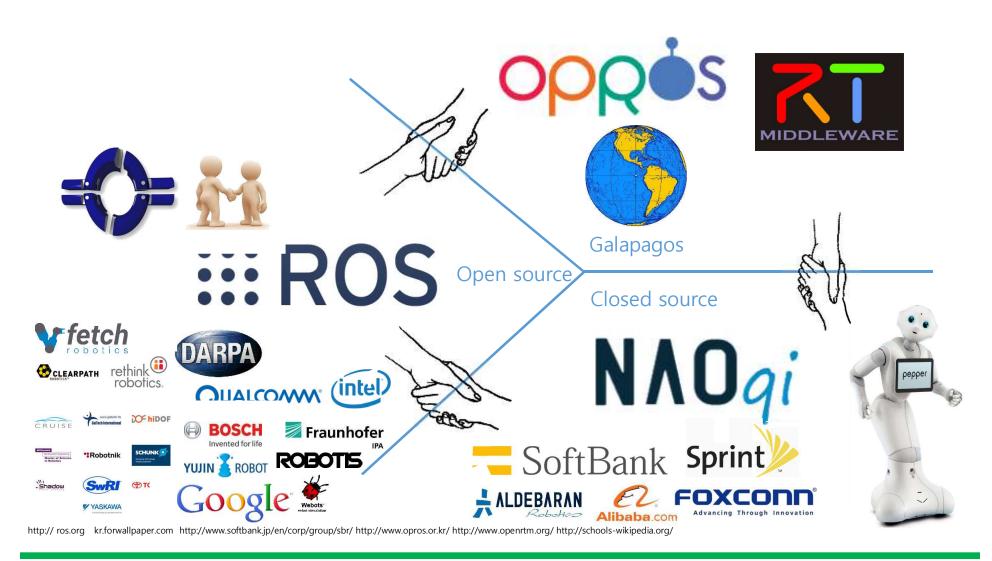**×10^2 ~10^3 faster**

Circuit Based

- High-Speed
- High-Accuracy
- Low-Power

AI/ML Algorithm Based on Verilog HDL

Robot Operating System

Open source

Closed source

Galapagos

Robotics for Rescue Operation

	PC (Personal Computer)	PP (Personal Phone)	PR (Personal Robot)
User			
Service			
Operating System			
Hardware			

Let's dream of a great player !

Let's dream of a great player !

Welcome to robotics and system-cybernetics team @ DA-IICT !