

Robotics: Research and Industry

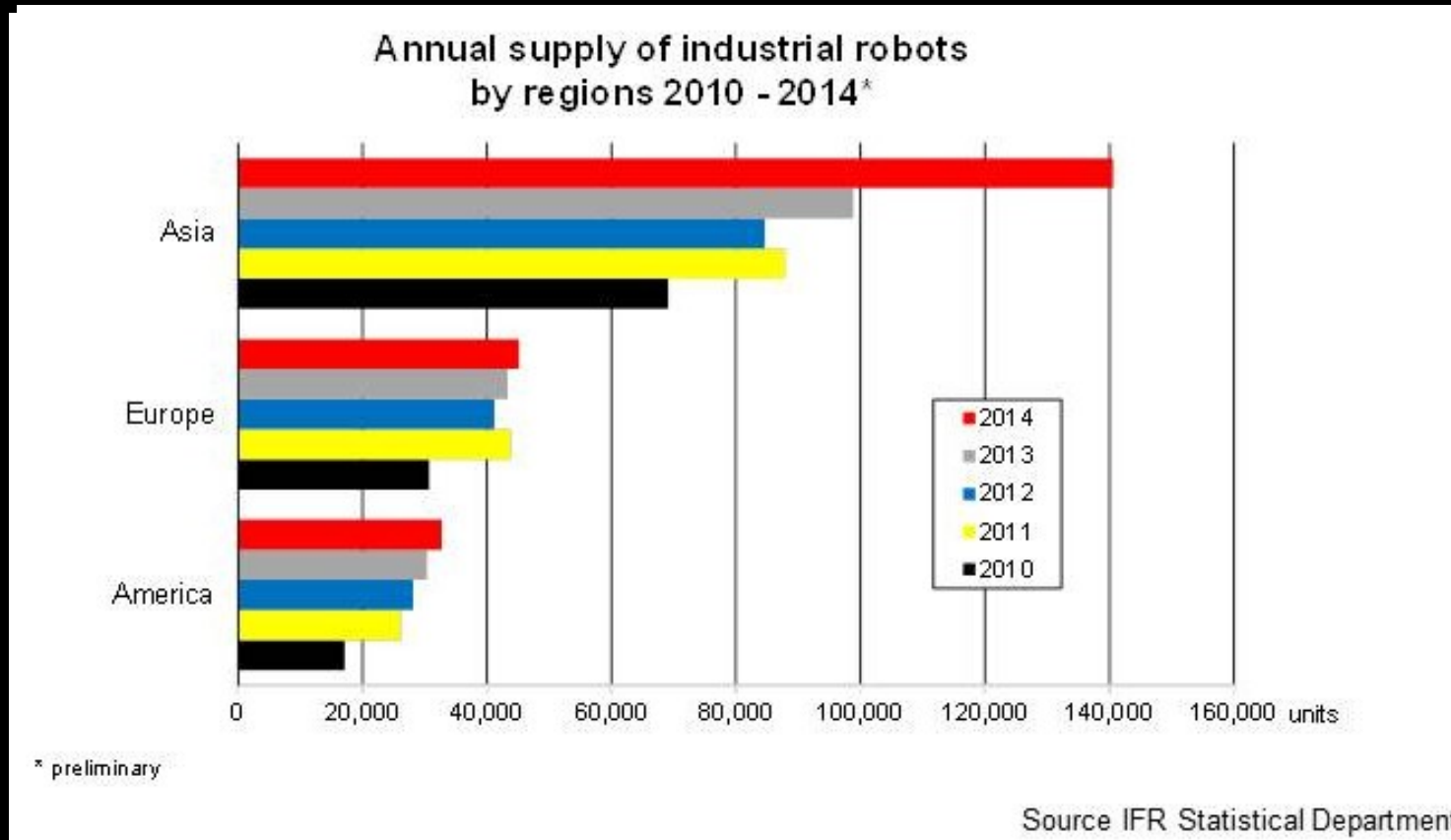
Jia Pan

The University of Hong Kong



Robotics and Economy

- From labor-intensive to tech-intensive economy



Success Stories in Industry

- Manufacturing industry



Bringing back jobs to the U.S. via the robot

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(CBS News) Payroll processor ADP says private businesses added 166,000 new jobs in September. In the future, some of those could be manufacturing jobs returning from places like China, thanks to a new piece of technology already working an assembly line in Pennsylvania.

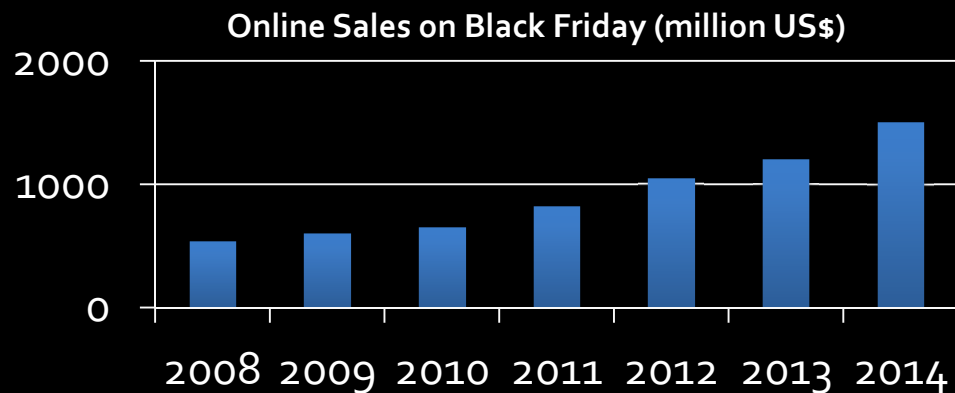
Meet Baxter, a robot. Just seven months on the line, he's the newest member of the team at Pennsylvania manufacturer Rodon.

Factory VP Lowell Allen has put Baxter to work at what he's best at: boring, repetitive jobs.



Meet Baxter, a robot. Just seven months on the line, he's the newest member of the team at Pennsylvania manufacturer Rodon. CBS NEWS

- Logistics industry



Robotics and Society

- Provide assistance / service for people
 - disabled, aged, patients and children
- Free everyone from tedious housework



Success Stories in Society



Robots help the hazardous work of high-voltage transmission line inspection.



Robotic prosthetic device helps Adrienne Haslet-Davis, a dancer who lost a leg during Boston bombing, to return to stage

Hong Kong's Role

- Hong Kong can greatly benefit from robotics
- Provide techniques for economic restructuring and industrial upgrading in China

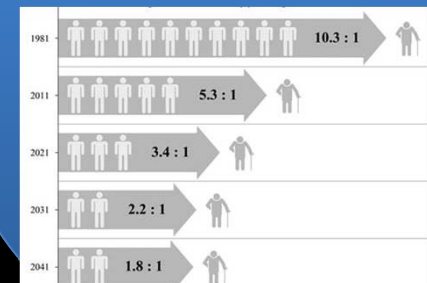
SME

320 K units (98% of HK)
1.3 M persons (47% of HK)

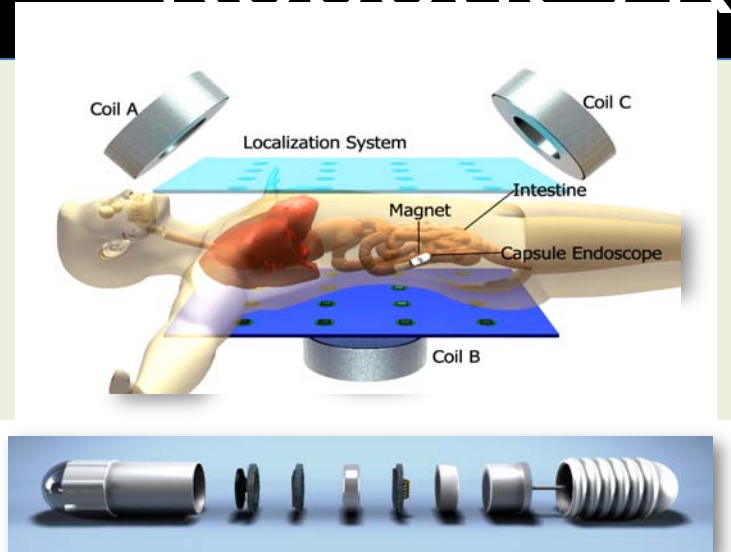
Logistics



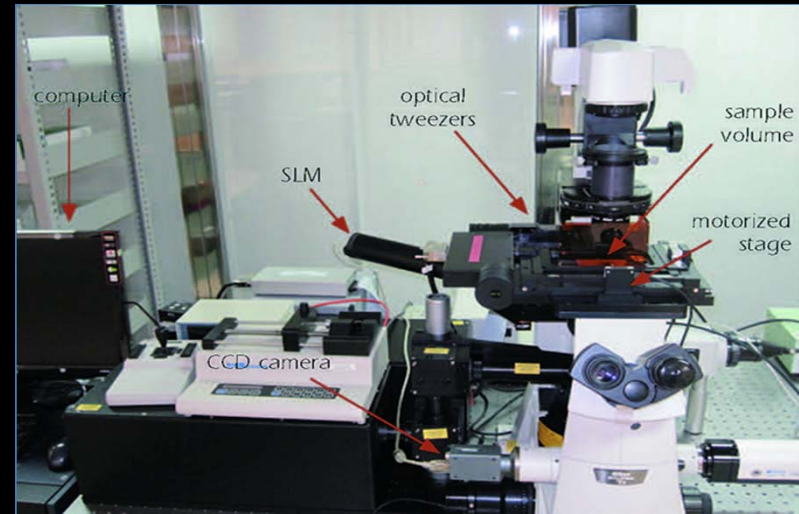
Healthcare & Service



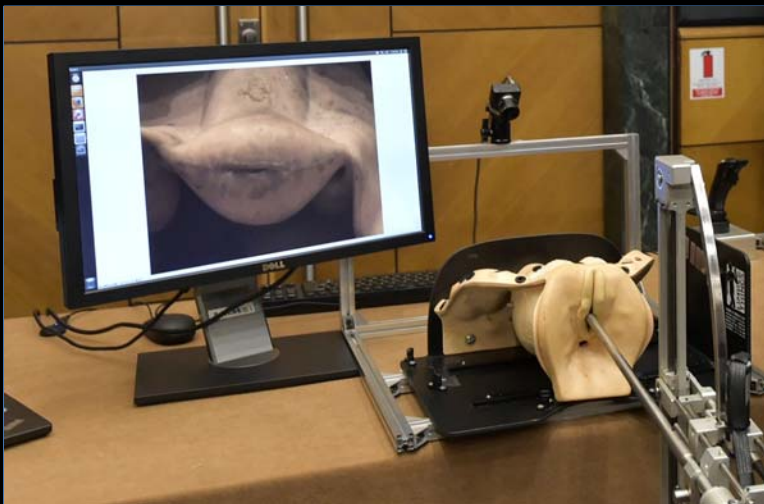
Robotics Research in HK



Robotic wireless capsule endoscopy



Robotic cell manipulation system

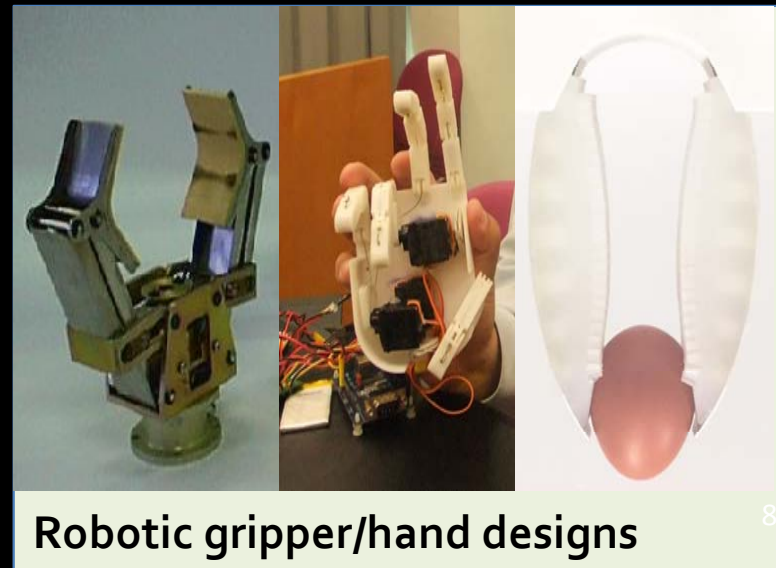
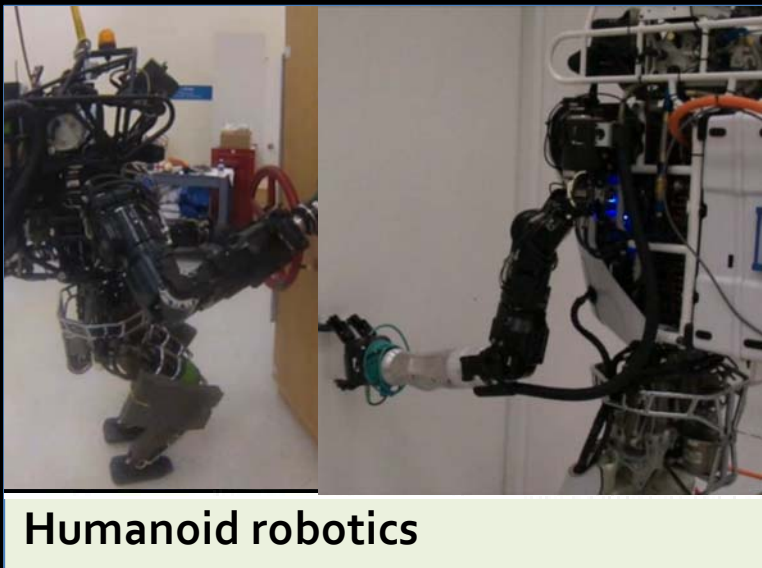
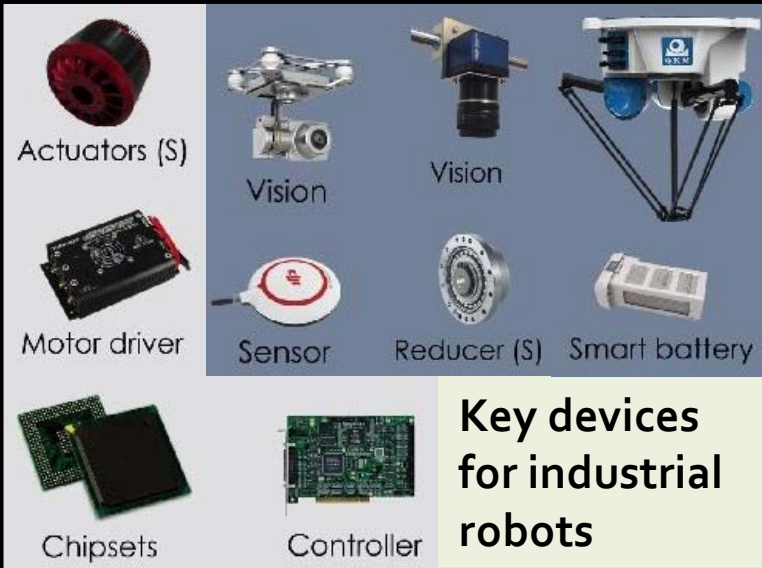


Robot assists hysterectomy surgery



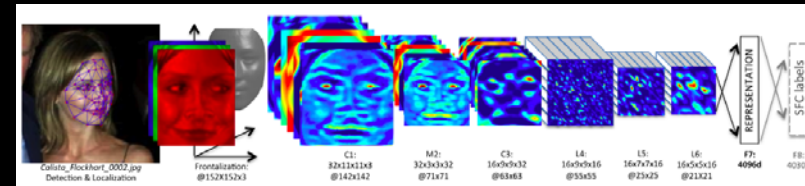
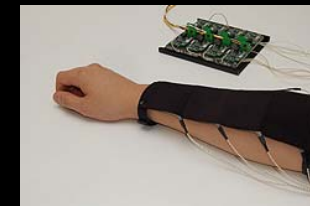
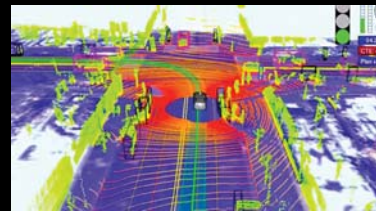
Real-time 3D ultrasound scanner for robotics surgery sensing

Robotics Research in HK



Research Hotspots

- New materials
- New sensors
- New algorithms
- New applications



The Trend

