模式识别

数据获取及模式识别系统的例子

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目标

- ✓ 和前面讲述内容对照，以Microsft Kinect为例，了解一个完整的系统的各模块、其面临的困难和所需处理的各种问题
- ✓ 从模式识别的角度出发，审视Kinect系统中与模式识别相关的各模块

Kinect

- Kinect is a line of motion sensing input devices by Microsoft for Xbox 360 and Xbox One video game consoles and Windows PCs. Based around a webcam-style addon peripheral, it enables users to control and interact with their console/computer without the need for a game controller, through a natural user interface using gestures and spoken commands.
- 如未特别说明，信息来源均为英文Wiki，2014/1/5

使用方式

✓ Microsoft released Kinect software development kit for Windows 7 on June 16, 2011.[11][12][13] This SDK was meant to allow developers to write Kinecting apps in C++/CLI, C#, or Visual Basic .NET.[14][15]

功能

✓ The device features an "RGB camera, depth sensor and multi-array microphone running proprietary software",[22] which provide full-body 3D motion capture, facial recognition and voice recognition capabilities.

获取深度信息

- The depth sensor consists of an infrared laser projector combined with a monochrome CMOS sensor, which captures video data in 3D under any ambient light conditions.[9][24]

- The monochrome depth sensing video stream is in VGA resolution (640 × 480 pixels) with 11-bit depth, which provides 2,048 levels of sensitivity.

- The Kinect sensor has a practical ranging limit of 1.2 - 3.5 m (3.9 - 11 ft) distance when used with the Xbox software.

Mocap: Motion Capture

为什么要讲Kinect？

✓ 这个版本其实已经停产
✓ 但是曾经是那是**最先进的产品**，非常流行

✓ 技术基础获得CVPR 2011**最佳论文奖**
  - 其PPT可以下载观看

  - 重点：其中用到的所有（或绝大部分？）技术，我们这门课到目前为止都讲过了！
  - 所以，请大家自己看看那个PPT