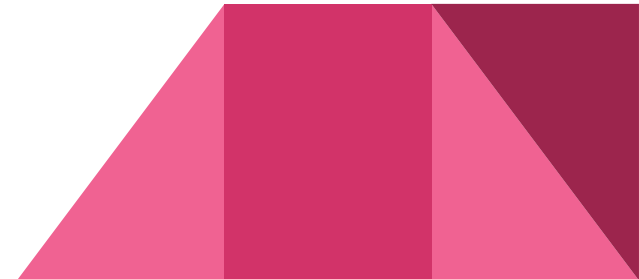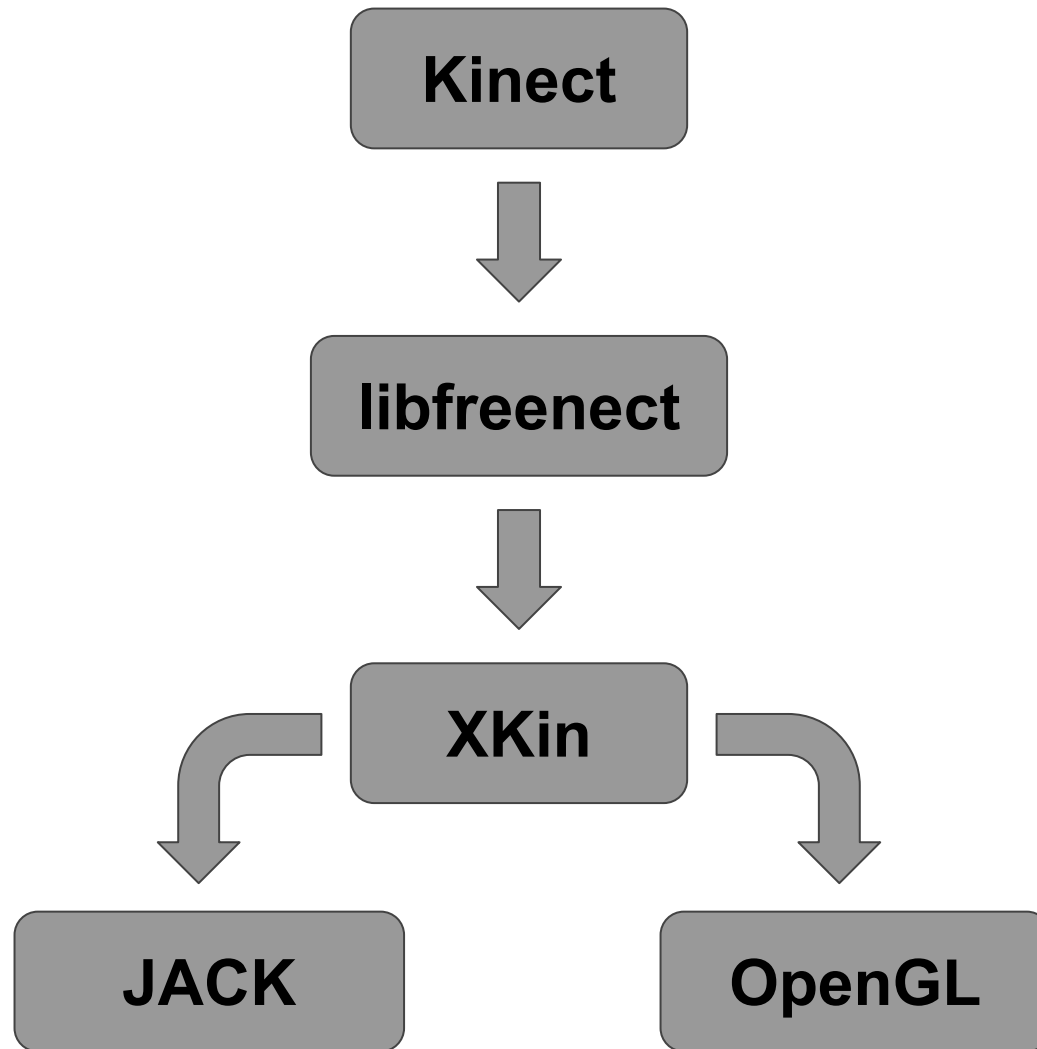# Gesture Recognition for Virtual Orchestra Conducting Using the Kinect

Edward Ly
CS 488
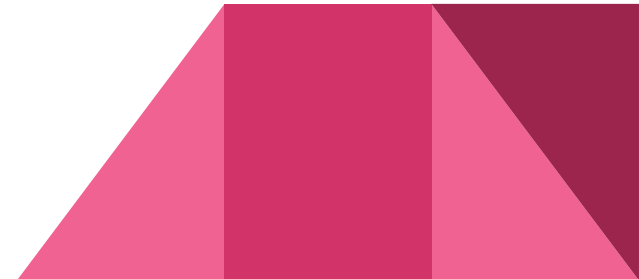Earlham College

Goal of the Project

Develop an application that takes raw video data from the Kinect as input and output music with tempo control according to the gestures being performed.

```mermaid
graph TD
    Kinect --> libfreenect
    libfreenect --> XKin
    XKin --> JACK
    XKin --> OpenGL
```

Kinect

libfreenect

XKin

JACK   **OpenGL**

Hardware & Software

- Hardware
  - Microsoft Kinect
  - Linux PC
- Software
  - C++ Application
  - Open-source, cross-platform libraries:
    - libfreenect
    - XKin
      - OpenCV
      - FFTW
- Graphical Output
  - OpenGL
- Audio output
  - PortAudio / rtAudio
  - JACK

Deadlines

- 10/26: Develop Test Build (simple gesture, audio output)
- 11/2: Integrate more complex gestures
- 11/9: Integrate JACK (musical output)
- 11/16: First Draft of Paper
- 11/30 or 12/4: Presentation
- 12/12: Second Draft
- 12/16: Final Draft