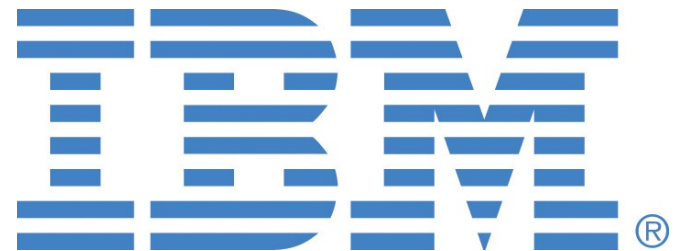
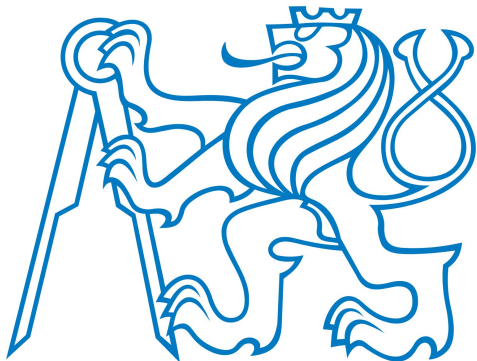


IBM Presence detection

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Introduction

- Task:
 - Design and realize an extension to the Smart Kiosk project which will detect presence of a person.
 - Utilize the OPENCV library and a camera.
 - Part of the design will be a scenario taking advantage of this information.



Implementation

- Used technologies:
 - C++ (no virtual machine code bloat and required by OpenCV anyways...)
 - OpenCV (face detection, recognition and other image processing)
 - Nokia Qt (GUI)
 - Windows Sockets (client/server communication)
 - DirectShow (video overlay drawing)



Task distribution

- Server:
 - Receives image data from clients
 - Performs face detection and recognition
 - Holds user registration data
 - Sends recognition results to clients
- Client:
 - Displays the results
 - Shows forms for login, registration, etc.



Used face recognition in detail

- Face detection: Viola and Jones (based on Haar wavelets)
- Face recognition:
 - Eigenfaces
 - Principal Component Analysis (PCA)



Does it work?

- It works quite well :) (for a one semester long assignment, that is)
 - Reasonably stable lighting conditions are required
 - At least two people (I mean their face images) are required to create working face recognition data

