

OSCN – 2009 (Pre-Final Presentation)

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Basic Objectives

- Allow real time tracking and recognition of human faces in a video stream
- Compare the performance of different combination of face detection and recognition algorithms
- Develop a security application which can keep track of all the people entering and leaving a secured zone.

Team Structure

- Abhishek Dutta
 - team coordinator, development of KEPENEKCI face recognition module
- Anjan Nepal
 - development of ADABOOST face detection module, final field testing incharge
- Bibek Shrestha
 - development of ROWLEYNN face detection module, project maintainer & release manager
- Lakesh Kansakar
 - development of LDA face recognition module, documentation manager

- Underlying technology
 - c++ codebase
 - gcc compiler and automake based build system
 - Gtk+ used for the User Interface
 - OpenMP used for multithreading
 - Kdevelop IDE
 - Libraries dependencies: opencv, octave, boost, vigra, fftw

- License
 - GNU GPL (General Public License)
 - strong copyleft license
 - ensures that the source code of all modifications, additions, or derivatives of RTFTR will be disclosed (eventually)

- Featured Aspects of RTFTR
 - Uses multiple algorithms in parallel for better accuracy and OpenMP based multithreading for real time performance.
 - Modular architecture of RTFTR ensures
 - easy incorporation of new face detection/recognition algorithms
 - visual data processing pathway can be modified as per user requirements

Market Values

- Can be used to support security personnel by automatically keeping records of entry/exit in a secured zone.
- Small businesses like banks, hotels, etc cannot afford the cost of military grade surveillance system. RTFTR comes to fill in this void and provide a low cost solution.
- Customization of RTFTR according to specific requirements of clients can be used to build up customer base and generate money.

Benefits to the society

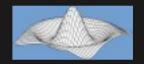
- GPL license ensures that everything in RTFTR will remain open source
- A platform to conduct R&D in the field of Computer Vision
- With RTFTR, everybody in the society has access to a surveillance system that can be used to secure homes, schools, public places, etc

- Open source philosophy
 - license source code of RTFTR has been released under GPL license
 - RTFTR developed in the true spirit of Open Source Software
 - Open source compiler (gcc) and build system (automake)
 - All the development and testing was done in Linux (we never felt the need to switch to other OS)
 - All the external libraries that RTFTR depends on for its functionality are also open source.
 - Open Source project management tools (svn, mediawiki, trac, mailman, etc) were used during the development of RTFTR

Open source libraries and software used















The GTK+ Project



Open source project management tools used











What did we learn?

- Open source project management tools used
 - we had only read about open source phenomena, now we have experienced it
 - open source world is self sufficient (never needed to foray into other OS)
 - project management and collaboration skills
 - project management tools, if used correctly, can ensure the successful and timely completion of an open source project.
 - a good knowledge base of Computer Vision

Thank You

http://rtftr.sourceforge.net/ http://collaborate.d2labs.org/projects/rtftr