



## OSCN – 2009 (Pre-Final Presentation)

July 16, 2009

# Project Overview

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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.

# Project Overview

- 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

# Project Overview

- 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`

# Project Overview

- 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)

# Unique Selling Proposition

# Unique Selling Proposition

- 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



# Unique Selling Proposition

- **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.

# Unique Selling Proposition

- 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 Aesthetics

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- 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 Aesthetics

- Open source libraries and software used



The GTK+ Project



# Open Source Aesthetics

- Open source project management tools used



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# 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>