

Term Project

Objective:

- Apply concepts of image processing learnt in lectures and lab to a real life problem.

Project description

The aim of this project is to develop your own vision system. The developed system should act on images/videos, process them and report its decision using an appropriate mean (visual, audio, control). Students are encouraged and will be rewarded for submitting their own innovative idea. Examples of such systems are:

1. Gate access controller: A gate is open for specific car based on their plate number.
2. Biometric-based office access controller: The system grants access for specific persons based on their faces, ears, iris or fingerprint.
3. Factory assembly line controller: The system recognizes certain objects or events and act accordingly.
4. Surveillance system: The system recognizes certain objects/persons existence or disappearing and act accordingly.
5. Any other real life problem.

Deadlines

Project proposals delivery(phase1) hard copy	Monday 23-10-2017
Final project delivery(phase2) by mail	Sunday 10-12-2017 at 12 pm

Team members: 3-4

Deliverables

Deliverable	Due to	Description
Project proposal	Phase1 – hard copy	The proposal should contain the following: <ul style="list-style-type: none">• Team members• Project idea and need.• Informative Block diagram of the project (i.e block names , inputs , outputs and methods)• Any needed non primitive (open source or matlab) functions.• Any additional comments.
Project code	Phase 2- on CD	The code of your project
Project report	Phase 2 – on CD	The project report should contain the contents of project proposal in addition to the following: <ul style="list-style-type: none">• Used algorithms• Experiment results and analysis• Work division between team members.• Accuracy , performance• Conclusion and references.• Any additional comments
Experiment results	Phase 2 – on CD –inside the project report	<ul style="list-style-type: none">• Level of variety for test cases used in experimental results.• Choice of comparison metric: accuracy, recall and/or etc.• Complete analysis for the system elaborating points of strengths and weakness. Showing the weakness of your system doesn't mean that the system is not good. It means that you conducted good experiments with logical interpretations of the results.



Test cases	Phase 2 – on CD	You have to include a wide range of test cases related to your project including working and failed test cases.
Read me file	Phase 2 – on CD	Contains directions on how to operate your project and needed libraries if any.

Grading criteria

Quality of Deliverables	(10%)
Experimental Results	(20%)
performance	(5%)
Project blocks	(60%)
Code modularity, readability and style	(5%)
Bonus <ul style="list-style-type: none">• Fancy GUI.• Complexity of the idea (TA should declare it at idea proposal).• Converting the idea to complete application and it should be real-time if applicable	(10%)
Individual Work	Each individual is given a percentage of team grade based on his/her work.

Notes

- Results of similar projects will be compared and the comparison may affect the grade.
- Usage of open-source code or functions:

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- Clear permission should be taken from a TA before using any implemented function or open-source code except primitive functions.
 - If the TA allowed the usage of any open-source code, attribution should be written in the report and inside the code itself.
 - Any violation to these rules will be considered cheating.
 - Any cheating is penalized by 0 in the project and -10 in the other work-grades.
 - Allowance of open source code, will be decided based on the project complexity, and it's relevance to image processing course objectives.
 - The discussion date for phase one will be announced to you later.