



# RAJIV GANDHI INSTITUTE OF TECHNOLOGY

DEPARTMENT OF COMPUTER SCIENCE AND  
ENGINEERING

## SEMINAR: EYEGAZE COMMUNICATION SYSTEM

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# ABSTRACT

- The Eye gaze System is a communication system for people with complex physical disabilities.
- This operates with eyes by looking at control keys displayed on a screen.
- With this system a person can synthesize speech, control his environment , operate a telephone, run computer software, operate a computer mouse, and access the Internet and e-mail.



# INTRODUCTION

- Imagine yourself being a intelligent, motivated, and working person in the fiercely competitive market of information technology, but just one problem You can't use your hands. Or you can't speak. How do you do your job? How do you stay employed?
- You can, because of a very good gift from computer Industry : The Eyegaze, a communication & control system you run with your eyes.
- 
- The Eye gaze System is a direct-select vision-controlled communication and control system.
- It was developed in FAIRFAX, Virginia by LC Technologies.



# USERS

- This system is mainly developed for those who lack the use of their hands or voice.
- Its users are adults and children with cerebral palsy, spinal cord injuries, brain injuries, ALS, multiple sclerosis, brainstem strokes



# SKILLS NEEDED

- Good control of one eye.
- Adequate vision.
- Ability to maintain a position in front of the Eye gaze monitor.

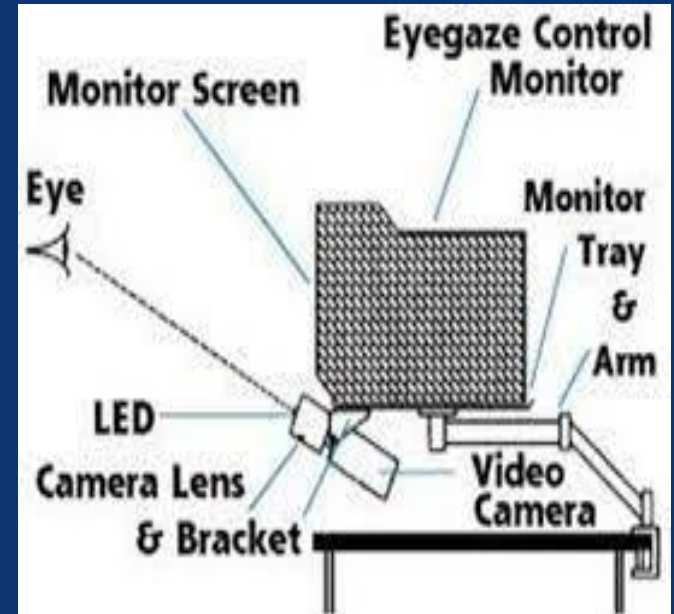
## Mental abilities:

- Cognition.
- Ability to read.
- Memory.



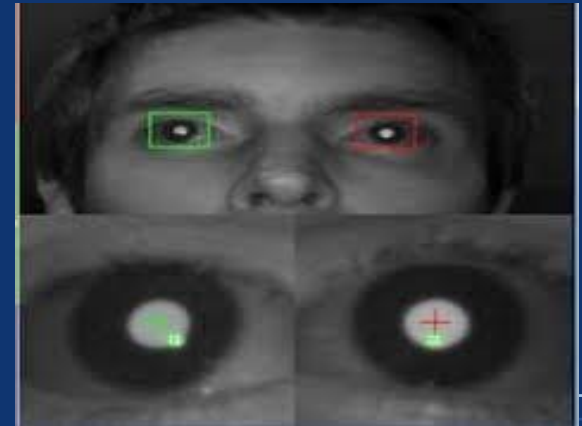
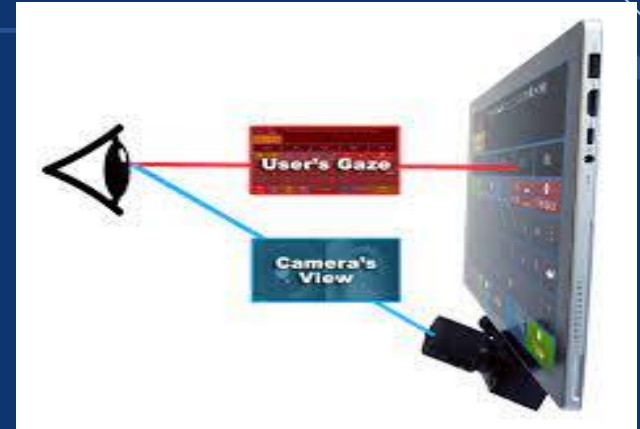
# PARTS

As a user sits in front of the Eyegaze monitor, a specialized video camera mounted below the monitor observes one of the user's eyes.



# WORKING

As a user sits in front of the Eyegaze monitor, a specialized video camera mounted below the monitor observes one of the user's eyes. Sophisticated image processing software in the Eyegaze System's computer continually analyzes the video image of the eye and determines where the user is looking on the screen.



# USES

The Basic Eyegaze Can:

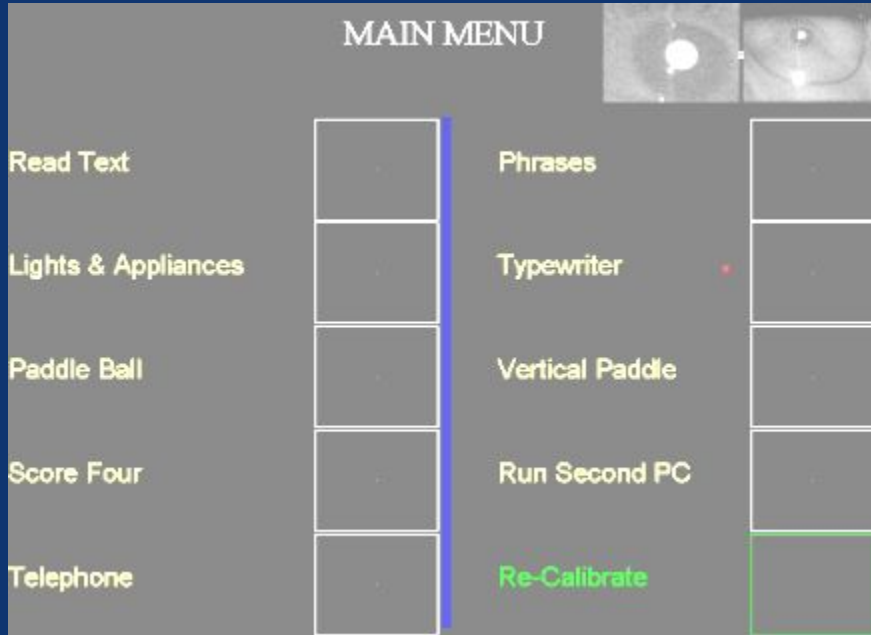
- Calibrate.
- Typewrite.
- Read Text.
- Entertain with games.
- Teach Screens



# APPLICATIONS

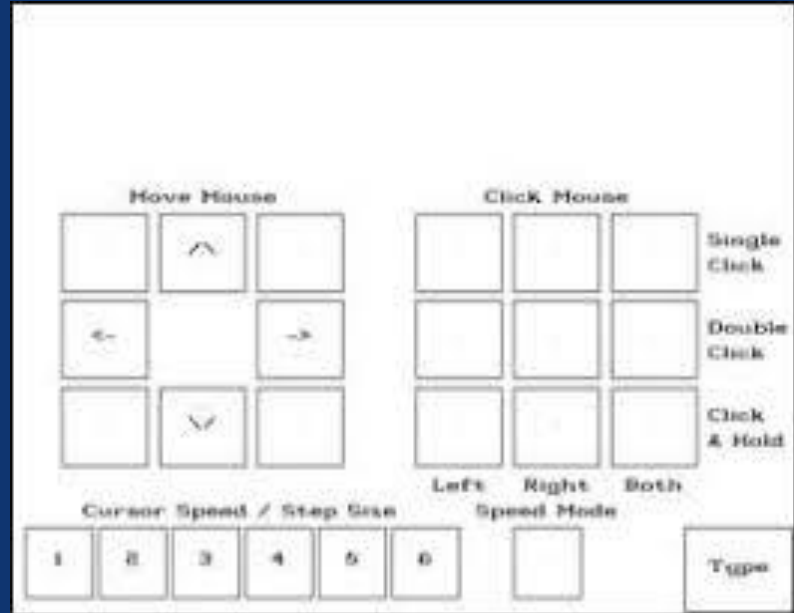
- BE A KEYBOARD.
- SPEAK through a speech synthesizer.
- CONTROL appliances .
- DIAL and answer a phone

# EYEGAZE MENUS



Conversation			
Hello	Good Bye	Good to see you	Where have you been
How have you been?	I've missed you	I'm Happy!	I'm Sad
I need a Hug	Good	I like that	Talk to me
Yes	No	Please	Menu

# EYEGAZE MENUS



# ADVANTAGES

- Eye movement is faster than other current media input.
- No training or particular coordination is required for normal users.
- Can determine where the user's interest is focused automatically.
- Helpful for users who have have physical disabilities to interact with environment.

# DISADVANTAGES

- This is expensive system.
- Some users can't work with the equipment if they are wear contact lenses or long eye lashes.
- Calibration of the system may take some time .
- Not 100% accuracy compared to touchscreen.

# ADVANCEMENTS

- Portable Eyegaze System Mounted on Wheelchair .
- Enhancing Screen of Eyegaze System.
- Decresing the latency of selection and processing.

# CONCLUSION

- The human eye-gaze can be recorded by relatively unremarkable techniques.
- It is very useful for physically disabled people.
- It is also referred as non command user interface.
- It is light weight ,less compact device which can make people efficient in their work.



THANK YOU