

Image processing

Project Proposal

Team 7

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Project idea:

Hand gesture controlled calculator:

In this project we use some signs with hand to write numbers on the screen, then we make another hand sign to make operation (addition) and then make signs to write the second operand finally we make the last sign to get the result.

• Signs:



(1)



(2)



(3)



(4)



(5)



(6)



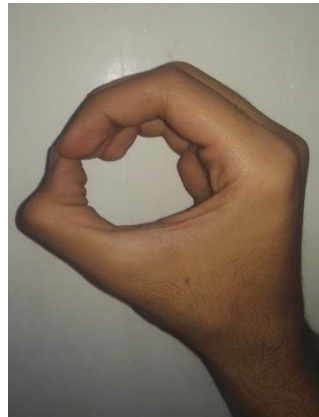
(7)



(8)



(9)



(0)



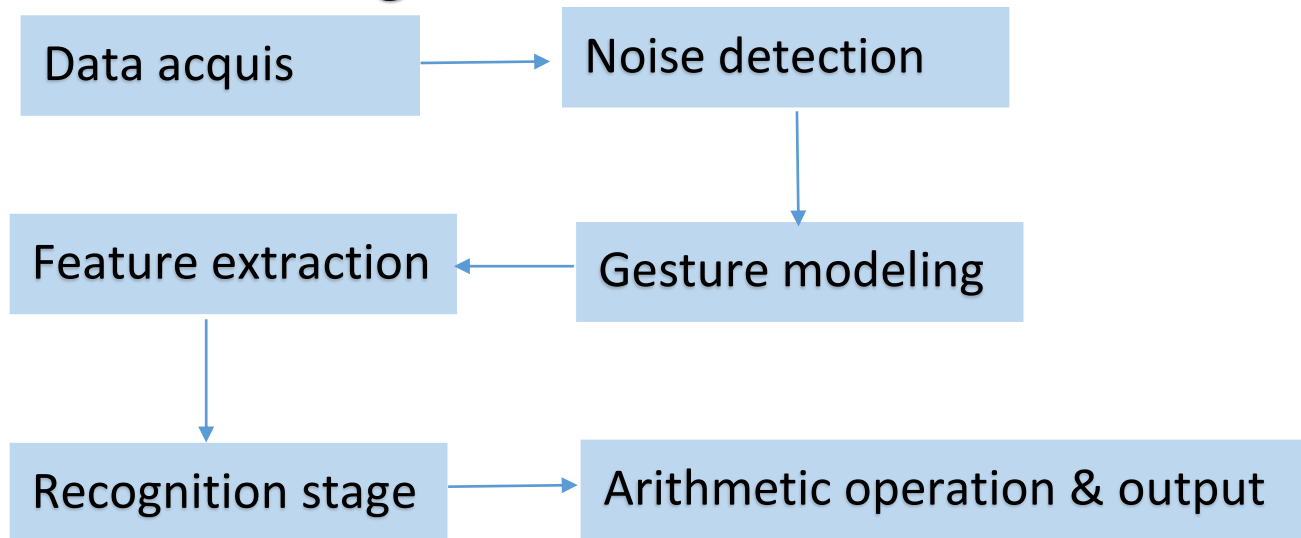
Transition state



(+ || =)

- **Need:** perform summation operation using cam without keyboard or mouse.

- **Block diagram**



- [1] Getting sign from the user.
- [2] Fixing noise and lighting problems.
- [3] Separating hand from the scene.
- [4] Determine which sign is it.
- [5] Out the corresponding data on the screen.
- [6] Repeat.
- [7] Make the operation and out the result when done.

- **Non-primitive: Opencv**

● Papers:

https://www.researchgate.net/publication/221932086_Hand_Gesture_Modeling_and_Recognition_using_Geometric_Features_A_Review?fbclid=IwAR0s8rN_QxMdMftJ9Afap6kE-7fUrSkxJ5RbftvVJanHqYDo9TpSD3J8Di0

http://research.sabanciuniv.edu/1225/1/malima_SIU06.pdf?fbclid=IwAR2uol25f47kOp4ir73NO_Ne9IKPWRaPKE0CGe7xxmjK6oZc2i0D0nDHxgAQ

https://elcvia.cvc.uab.es/article/viewFile/v5-n3-manresa-varona-mas-et-al/106?fbclid=IwAR1E25IzY5aW27vM62iJ9FARsyBvSaVOlyimPJWOZXVjNpnXiwO_ahO_YHw