

# **Image Processing Project**

# **Excel Creator**



٥ إبراهيم فتحي عبدالمجيد السيد عيسى ٥

٥ أحمد أسامه أحمد رضا

و أحمد جمعة عبدالعال محمد

٥ أحمد عاطف عبدالوهاب عباس

### • About the Project:

Instead of wasting time in data entry, we are aiming at making work easier. Our app will read printed sheets and create a softcopy excel sheet with the same data.

## • Input Samples:

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recognition of three kinds of basic learning expressions is finally accomplished.

In the experiments, nine expression images of three E-learners are randomly chose; they contain all three kinds of expression images; absorbed, neuter and fatigue expressions and the number of each kind is mire. Experimental results are shown as follows Table III and Table IV.

	Absorbed	Neuter	Fatigue
Absorbed	7	2	0
Neuter	3	5	1
Patigue	0	1	8

TABLE IV. LEARNING EXPRESSION RECOGNITION RATE

Expression	Image Num	Correct	Recognition Rate	
Absorbed	9	7	77.8%	
Neuter	9	5	55.6%	
Fatigue	9	8	88.9%	

As results indicate, the learning expressions of E-learner can be accurately recognized, and the average recognition rate is 741. For the facial expression characteristics of absorbed expression and fatigue expression are more obvious than neuter expression, so it can be found that the recognition rate of absorbed expressions and fatigue expression is higher than neuter expressions. After E-learner's expression state is incentive pleasures to their given emotion state would be taken to decrease the emotional absences in E-learning.

VI. CONCLUSION

The emotional state is of great relation to learning efficiency of E-learner. Facing the truth that there are serious emotional absences in E-learning, we propose an approach to learning expression modeling of E-learner, using affective computing theory and facial expression recognition technique We define three basic learning recognition technique We define three basic learning elearning emotions. This paper makes a foundation to taking emotion incentive pleasures to decrease the emotional absences in E-learning. Our experimental results demonstrate the effectiveness of our work.

There are several difficulties in facial expression recognition (FER) due to the variation of facial expression sen for the same individual. Because the common expressions of E-learner are usually complex and mixed, and dividing expressions into only several basic kinds may decrease the universal of the system. On

the other hand, it is still not very clear what factors contribute to the final expression representation of human. When E-learners' eyes is closed but not be fatigue, it may make a false recognition, so only one image being recognized is not enough. In future work, we plan to extend more universal kinds of learning emotions of E-learner and take emotion incentive pleasures to E-learner, We would also like to research the relation between learning emotions and expressions deeply and try to build an emotion state transformation model.

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- REFERENCES

  II Picard, R. W. Affective Computing. MIT Press, Cambridge, 1997.

  [2] M.J. Blackand Y. Yacoob. "Recognizing facial expressions in image sequences using local parameterized on 1. pp. 32-48, 1997.

  [3] Liu Jingfu, Zhong Zhixian. "Lack of sensation in on-line teaching and countermeasure," China Distance Education, Image 2001.

  [4] Kehrneger S. "A Multilayer Personality Model." In: Symposium on Smart Graphics, New York, pp. 107-115, 2002.

- SMARTGAPH '02: Proceedings of the 2nd International Symposium on Smart Graphics, New York, pp. 107-115.

  [5] Pleard, R. W. "Towards Computers that Recognice and Respond to User Emotions," IBM System Journal, vol 30, pp. 705-719, 2001.

  [6] H. Rowels, S. Balaja, and T. Kanade. "Human face of the Computer of the Computer Science, Carnegie Mellon University, November 1995. Feethical Report CMUCS-95-158R, School of Computer Science, Carnegie Mellon University, November 1995.

  [7] K. K. Sung and T. Poggio. "Example-based learning for K. K. Sung and T. Poggio. "Example-based learning for Mellon University, November 1995.

  [8] R. Chellappa, C.Wilson, and S. Sirobey. "Human and machine recognition of facil actypessions," IEEE Transactions on Pattern Analysis and Machine Intelligence, pp. 1915. In the American Science of the Computer Science of the Computer Science of the Computer Science in Neural Information Processing Systems 3, Morgan and Kanfman, San Mateo, pp. 564–571, 1991.

  [10] G. Cotterl and J. Metasife, "Face, gender and emotion recognition using holons," In D. Touretzky, editor, Advances in Neural Information Processing Systems 3, Morgan and Kanfman, San Mateo, pp. 564–571, 1991.

  [11] Elsman, P. Friecen, W. "Unmasking the face, A guide to recogning emotions from facial expressions," Consulting Psychologists Press, Pp. 106-200, 1992.

  [12] Elsman, P. Am argument for basic emotions," Cognition and Emotion, 6, pp. 106-200, 1992.

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name	age	species	occupation
Earl of Lemongrab	Unknown	Lemon Candy	Earl, Heir to the Candy Kingdom Throne
Bonnibel Bubblegum	19	Gum Person	Returned Ruler of the Candy Kingdom
Phoebe	16	Flame Person	Ruler of the Fire Kingdom
Lumpy Space Princess	18	Lumpy Space Person	Babysitter

# • Output example:

	A A		С	D	E
1	name	age	species	occupation	
2	Earl of Lemongrab	Unknown	Lemon Candy	Earl, Heir to the Candy Kingdom Throne	
3	Bonnibel Bubblegum	19	Gum Person	Returned Ruler of the Candy Kingdom	
4	Phoebe	16	Flame Person	Ruler of the Fire Kingdom	
5	Lumpy Space Princess	18	Lumpy Space Person	Babysitter	
6					
7					
8					

A	Α	В	С	D	E
1				-5350	C. C
2	Expesion	Image Num	Correct		
3	Absorbed	9	7	77.80%	
4	Neuter	9	5	55.60%	
5	Fatigue	9	8	88.90%	
6	Average recognition rate: 74.1%				
7					
8					

### Our Program Should:

- o Capture the picture.
- o Recognize data cells and their distribution.
- o Recognize text from images.
- Create output excel sheet.

## • How the program works:

- o Image Loading.
- o Image Filtering (Using Adaptive Thresholding).
- o Horizontal and Vertical Line Isolation.
- o Table Extraction from image.
- Splitting Table into Cells.
- o Processing each Cell as a single image.
- OCR for text recognition.
- Writing Text to Excel Cell.

### Comments:

- Program Requires:
  - numpy==1.16.0
  - opency-python==4.0.0.21
  - pdf2image==1.4.0
  - Pillow==5.4.1
  - pytesseract==0.2.6
  - XlsxWriter==1.1.2