**Добірка наукових публікацій щодо розпізнавання мікровиразів обличчя та визначення емоційного стану людини завдяки застосуванню цього методу**

1. P. Ekman, “An argument for basic emotions,” *Cognition and Emotion*, vol. 6, pp. 169–200, 1992.

2. Paul Ekman, *Emotions Revealed: Understanding Faces and Feelings*. Phoenix, 2004.

3. P. Ekman and E. L. Rosenberg, *What the Face Reveals: Basic and Applied Studies of Spontaneous Expression Using the Facial Action Coding System (FACS)*, ser. Series in Affective Science. Oxford University Press, 2005.

4. J. A. Russell and J. M. Ferna ́ndez-Dols, *The psychology of facial expression*. Cambridge university press, 1997.

5. P. Ekman, “Lie catching and microexpressions,” in *The Philosophy of Deception*, C. W. Martin, Ed. Oxford University Press, 2009, pp. 118–133.

6. D. Matsumoto, S. H. Yoo, and S. Nakagawa, “Culture, emotion regulation, and adjustment.” *Journal of personality and social psy- chology*, vol. 94, no. 6, p. 925, 2008.

7. M. O’Sullivan, M. G. Frank, C. M. Hurley, and J. Tiwana, “Police lie detection accuracy: The effect of lie scenario.” *Law and Human Behavior*, vol. 33, no. 6, p. 530, 2009.

8. M. G. Frank, C. J. Maccario, and V. l. Govindaraju, “Behavior and security,” in *Protecting airline passengers in the age of terrorism*. Greenwood Pub. Group, 2009.

9. M. Frank, M. Herbasz, K. Sinuk, A. M. Keller, A. Kurylo, and C. Nolan, “I see how you feel: Training laypeople and profession- als to recognize fleeting emotions,” in *International Communication Association*, 2009.

10. W.-J. Yan, Q. Wu, J. Liang, Y.-H. Chen, and X. Fu, “How fast are the leaked facial expressions: The duration of micro-expressions,” *Journal of Nonverbal Behavior*, vol. 37, no. 4, pp. 217–230, 2013.

11. P. Ekman, *Telling Lies: Clues to Deceit in the Marketplace, Politics, and Marriage*. Norton, 2001.

12. P. Ekman and W. V. Friesen, “Nonverbal leakage and clues to deception,” *Psychiatry*, vol. 32, no. 1, pp. 88–106, 1969.

13. X.-B. Shen, Q. Wu, and X.-L. Fu, “Effects of the duration of expressions on the recognition of microexpressions,” *Journal of Zhejiang University SCIENCE B*, vol. 13, no. 3, pp. 221–230, 2012.

14. S. Polikovsky, Y. Kameda, and Y. Ohta, “Facial micro-expressions recognition using high speed camera and 3d-gradient descrip- tor,” in *Crime Detection and Prevention (ICDP 2009), 3rd Interna- tional Conference on*. IET, 2009, pp. 1–6.

15. I. A. Essa and A. P. Pentland, “Coding, analysis, interpretation, and recognition of facial expressions,” *IEEE transactions on pattern analysis and machine intelligence*, vol. 19, no. 7, pp. 757–763, 1997.

16. S. Kimura and M. Yachida, “Facial expression recognition and its degree estimation,” in *Computer Vision and Pattern Recogni- tion, 1997. Proceedings., 1997 IEEE Computer Society Conference on*. IEEE, 1997, pp. 295–300.

17. M. Pantic and L. J. M. Rothkrantz, “Automatic analysis of facial expressions: The state of the art,” *IEEE Transactions on pattern analysis and machine intelligence*, vol. 22, no. 12, pp. 1424–1445, 2000.

18. B. Fasel and J. Luettin, “Automatic facial expression analysis: a survey,” *Pattern recognition*, vol. 36, no. 1, pp. 259–275, 2003.

19. M. McCabe, “Best practice recommendation for the capture of mugshots,” *http://www. itl. nist. gov/iaui/894.03/face/bprmug3. htm*, 2009.

20. S. Afzal and P. Robinson, “Natural affect datacollection & anno- tation in a learning context,” in *Affective Computing and Intelligent Interaction and Workshops, 2009. ACII 2009. 3rd International Con- ference on*. IEEE, 2009, pp. 1–7.

21. M. Shreve, S. Godavarthy, D. Goldgof, and S. Sarkar, “Macro- and micro-expression spotting in long videos using spatio-temporal strain,” in *2011 IEEE International Conference on Automatic Face Gesture Recognition and Workshops (FG 2011)*, 2011, pp. 51–56.

22. G. Warren, E. Schertler, and P. Bull, “Detecting deception from emotional and unemotional cues,” *Journal of Nonverbal Behavior*, vol. 33, no. 1, pp. 59–69, 2009.

23. T. Pfister, X. Li, G. Zhao, and M. Pietika ̈inen, “Recognising spon- taneous facial micro-expressions,” in *Computer Vision (ICCV), 2011 IEEE International Conference on*. IEEE, 2011, pp. 1449–1456. X. Li, T. Pfister, X. Huang, G. Zhao, and M. Pietikainen, “A spontaneous micro-expression database: Inducement, collection and baseline,” in *Automatic Face and Gesture Recognition (FG), 2013 10th IEEE International Conference and Workshops on*. IEEE, 2013, pp. 1–6.

24. W.-J. Yan, Q. Wu, Y.-J. Liu, S.-J. Wang, and X. Fu, “Casme database: a dataset of spontaneous micro-expressions collected from neutralized faces,” in *Automatic Face and Gesture Recognition (FG), 2013 10th IEEE International Conference and Workshops on*. IEEE, 2013, pp. 1–7.

25. W.-J. Yan, X. Li, S.-J. Wang, G. Zhao, Y.-J. Liu, Y.-H. Chen, and X. Fu, “Casme ii: An improved spontaneous micro-expression database and the baseline evaluation,” *PloS one*, vol. 9, no. 1, 2014.

26. A. K. Davison, C. Lansley, N. Costen, K. Tan, and M. H. Yap, “Samm: A spontaneous micro-facial movement dataset,” *IEEE Transactions on Affective Computing*, vol. 9, no. 1, pp. 116–129, Jan 2018.

27. F. Qu, S.-J. Wang, W.-J. Yan, H. Li, S. Wu, and X. Fu, “Cas (me)ˆ 2: A database for spontaneous macro-expression and micro- expression spotting and recognition,” *IEEE Transactions on Affec- tive Computing*, 2017.

28. P. Ekman and W. V. Friesen, *Facial Action Coding System: A Technique for the Measurement of Facial Movement*. Palo Alto: Consulting Psychologists Press, 1978.

29. S. Polikovsky and Y. Kameda, “Facial micro-expression detection in hi-speed video based on facial action coding system (facs),” *IEICE transactions on information and systems*, vol. 96, no. 1, pp. 81–92, 2013.

30. M. Chen, H. T. Ma, J. Li, and H. Wang, “Emotion recognition using fixed length micro-expressions sequence and weighting method,” in *Real-time Computing and Robotics (RCAR), IEEE In- ternational Conference on*. IEEE, 2016, pp. 427–430.

31. T. Pfister, X. Li, G. Zhao, and M. Pietika ̈inen, “Differentiating spontaneous from posed facial expressions within a generic facial expression recognition framework,” in *Computer Vision Workshops (ICCV Workshops), 2011 IEEE International Conference on*. IEEE, 2011, pp. 868–875.

32. Y. Song, L.-P. Morency, and R. Davis, “Learning a sparse code- book of facial and body microexpressions for emotion recogni- tion,” in *Proceedings of the 15th ACM on International conference on multimodal interaction*. ACM, 2013, pp. 237–244.

33. Y. Guo, Y. Tian, X. Gao, and X. Zhang, “Micro-expression recogni- tion based on local binary patterns from three orthogonal planes and nearest neighbor method,” in *Neural Networks (IJCNN), 2014 International Joint Conference on*. IEEE, 2014, pp. 3473–3479.

34. S.-J. Wang, W.-J. Yan, X. Li, G. Zhao, and X. Fu, “Micro-expression recognition using dynamic textures on tensor independent color space,” in *Pattern Recognition (ICPR), 2014 22nd International Conference on*. IEEE, 2014, pp. 4678–4683.

35. A. C. Le Ngo, R. C.-W. Phan, and J. See, “Spontaneous subtle expression recognition: Imbalanced databases and solutions,” in *Computer Vision–ACCV 2014*. Springer, 2014, pp. 33–48.

36. Z. Lu, Z. Luo, H. Zheng, J. Chen, and W. Li, “A delaunay- based temporal coding model for micro-expression recognition,” in *Asian Conference on Computer Vision*. Springer, 2014, pp. 698– 711.

37. S.-T. Liong, J. See, R. C.-W. Phan, A. C. Le Ngo, Y.-H. Oh, and K. Wong, “Subtle expression recognition using optical strain weighted features,” in *Asian Conference on Computer Vision*. Springer, 2014, pp. 644–657.

38. S.-J. Wang, H.-L. Chen, W.-J. Yan, Y.-H. Chen, and X. Fu, “Face recognition and micro-expression recognition based on discrim- inant tensor subspace analysis plus extreme learning machine,” *Neural processing letters*, vol. 39, no. 1, pp. 25–43, 2014.

39. A. K. Davison, M. H. Yap, N. Costen, K. Tan, C. Lansley, and D. Leightley, “Micro-facial movements: An investigation on spatio-temporal descriptors,” in *Computer Vision-ECCV 2014 Workshops*. Springer, 2014, pp. 111–123.

40. C. House and R. Meyer, “Preprocessing and descriptor features for facial micro-expression recognition,” 2015.

41. Y. Wang, J. See, R. C.-W. Phan, and Y.-H. Oh, “Efficient spatio- temporal local binary patterns for spontaneous facial micro- expression recognition,” *PloS one*, vol. 10, no. 5, p. e0124674, 2015.

42. S.-J. Wang, W.-J. Yan, X. Li, G. Zhao, C.-G. Zhou, X. Fu, M. Yang, and J. Tao, “Micro-expression recognition using color spaces,” *IEEE Transactions on Image Processing*, vol. 24, no. 12, pp. 6034– 6047, 2015.

43. A. C. Le Ngo, S.-T. Liong, J. See, and R. C.-W. Phan, “Are subtle expressions too sparse to recognize?” in *2015 IEEE International Conference on Digital Signal Processing (DSP)*. IEEE, 2015, pp. 1246–1250.

44. X. Huang, S.-J. Wang, G. Zhao, and M. Piteikainen, “Facial micro- expression recognition using spatiotemporal local binary pattern with integral projection,” in *Proceedings of the IEEE International Conference on Computer Vision Workshops*, 2015, pp. 1–9.

45. Y.-J. Liu, J.-K. Zhang, W.-J. Yan, S.-J. Wang, G. Zhao, and X. Fu, “A main directional mean optical flow feature for spontaneous micro-expression recognition,” *IEEE Transaction of Affective Com- puting*, 2015.

46. X. Li, X. Hong, A. Moilanen, X. Huang, T. Pfister, G. Zhao, and M. Pietika ̈inen, “Reading hidden emotions: spontaneous micro-expression spotting and recognition,” *arXiv preprint arXiv:1511.00423*, 2015.

47. S. K. A. Kamarol, N. S. Meli, M. H. Jaward, and N. Kamrani, “Spatio-temporal texture-based feature extraction for sponta- neous facial expression recognition,” in *Machine Vision Applica- tions (MVA), 2015 14th IAPR International Conference on*. IEEE, 2015, pp. 467–470.

48. G. Zhao and M. Pietikainen, “Dynamic texture recognition using local binary patterns with an application to facial expressions,” *Pattern Analysis and Machine Intelligence, IEEE Transactions on*, vol. 29, no. 6, pp. 915–928, 2007.

49. Z. Guo, L. Zhang, and D. Zhang, “A completed modeling of local binary pattern operator for texture classification,” *Image Processing, IEEE Transactions on*, vol. 19, no. 6, pp. 1657–1663, 2010.

50. T. F. Cootes, C. J. Taylor, D. H. Cooper, and J. Graham, “Active shape models-their training and application,” *Computer vision and image understanding*, vol. 61, no. 1, pp. 38–59, 1995.

51. Z. Niu, S. Shan, S. Yan, X. Chen, and W. Gao, “2d cascaded adaboost for eye localization,” in *Pattern Recognition, 2006. ICPR 2006. 18th International Conference on*, vol. 2. IEEE, 2006, pp. 1216–1219.

52. Q. Wu, X. Shen, and X. Fu, “The machine knows what you are hiding: an automatic micro-expression recognition system,” in *Affective Computing and Intelligent Interaction*. Springer, 2011, pp. 152–162.

53. M. S. Islam *et al.*, “Local gray code pattern (lgcp): A robust feature descriptor for facial expression recognition,” *International Journal of Science and Research (IJSR), India Online ISSN*, pp. 2319–7064, 2013.

54. M. R. Jovanovic ́, P. J. Schmid, and J. W. Nichols, “Sparsity- promoting dynamic mode decomposition,” *Physics of Fluids (1994-present)*, vol. 26, no. 2, p. 024103, 2014.

55. J.-T. Chien and C.-C. Wu, “Linear discriminant analysis (lda),” 2005.

56. B. B. Talukder, B. Chowdhury, T. Howlader, and S. M. Rahman, “Intelligent recognition of spontaneous expression using motion magnification of spatio-temporal data,” in *Pacific-Asia Workshop on Intelligence and Security Informatics*. Springer, 2016, pp. 114– 128.

57. X. Duan, Q. Dai, X. Wang, Y. Wang, and Z. Hua, “Recognizing spontaneous micro-expression from eye region,” *Neurocomputing*, vol. 217, pp. 27–36, 2016.

58. L.-b. S. A. Spatiotemporal, “Local ordinal contrast pattern his- tograms for spatiotemporal, lip-based speaker authentication,” 2011.

59. P. Dolla ́r, V. Rabaud, G. Cottrell, and S. Belongie, “Behavior recog- nition via sparse spatio-temporal features,” in *Visual Surveillance and Performance Evaluation of Tracking and Surveillance, 2005. 2nd Joint IEEE International Workshop on*. IEEE, 2005, pp. 65–72.

60. S. Jain, C. Hu, and J. K. Aggarwal, “Facial expression recognition with temporal modeling of shapes,” in *Computer Vision Workshops (ICCV Workshops), 2011 IEEE International Conference on*. IEEE, 2011, pp. 1642–1649.

61. X. Huang, S. Wang, X. Liu, G. Zhao, X. Feng, and M. Pietikainen, “Spontaneous facial micro-expression recognition using discrim- inative spatiotemporal local binary pattern with an improved integral projection,” *arXiv preprint arXiv:1608.02255*, 2016.

62. Y. Wang, J. See, Y.-H. Oh, R. C.-W. Phan, Y. Rahulamathavan, H.-C. Ling, S.-W. Tan, and X. Li, “Effective recognition of facial micro-expressions with video motion magnification,” *Multimedia Tools and Applications*, pp. 1–26, 2016.

63. Y. Wang, J. See, R. C.-W. Phan, and Y.-H. Oh, “Lbp with six in- tersection points: Reducing redundant information in lbp-top for micro-expression recognition,” in *Asian Conference on Computer Vision*. Springer, 2014, pp. 525–537.

64. S. Y. Park, S. H. Lee, and Y. M. Ro, “Subtle facial expression recognition using adaptive magnification of discriminative facial motion,” in *Proceedings of the 23rd ACM international conference on Multimedia*. ACM, 2015, pp. 911–914.

65. S. Zhang, B. Feng, Z. Chen, and X. Huang, “Micro-expression recognition by aggregating local spatio-temporal patterns,” in *International Conference on Multimedia Modeling*. Springer, 2017, pp. 638–648.

66. Y. Zong, X. Huang, W. Zheng, Z. Cui, and G. Zhao, “Learning a target sample re-generator for cross-database micro-expression recognition,” in *Proceedings of the 2017 ACM on Multimedia Con- ference*. ACM, 2017, pp. 872–880.

67. Y. Zong, W. Zheng, X. Huang, J. Shi, Z. Cui, and G. Zhao, “Do- main regeneration for cross-database micro-expression recogni- tion,” *IEEE Transactions on Image Processing*, vol. 27, no. 5, pp. 2484–2498, 2018.

68. S.-T. Liong, J. See, R. C.-W. Phan, K. Wong, and S.-W. Tan, “Hy- brid facial regions extraction for micro-expression recognition system,” *Journal of Signal Processing Systems*, vol. 90, no. 4, pp. 601–617, 2018.

69. Y. Zong, X. Huang, W. Zheng, Z. Cui, and G. Zhao, “Learn- ing from hierarchical spatiotemporal descriptors for micro- expression recognition,” *IEEE Transactions on Multimedia*, 2018.

70. P. Zhang, X. Ben, R. Yan, C. Wu, and C. Guo, “Micro-expression recognition system,” *Optik-International Journal for Light and Elec- tron Optics*, vol. 127, no. 3, pp. 1395–1400, 2016.

71. X. Huang, G. Zhao, X. Hong, W. Zheng, and M. Pietika ̈inen, “Spontaneous facial micro-expression analysis using spatiotem- poral completed local quantized patterns,” *Neurocomputing*, vol. 175, pp. 564–578, 2016.

72. X. Ben, P. Zhang, R. Yan, M. Yang, and G. Ge, “Gait recognition and micro-expression recognition based on maximum margin projection with tensor representation,” *Neural Computing and Applications*, vol. 27, no. 8, pp. 2629–2646, 2016.

73. S.-T. Liong, J. See, R. C.-W. Phan, and K. Wong, “Less is more: Micro-expression recognition from video using apex frame,” *arXiv preprint arXiv:1606.01721*, 2016.

74. S.-T. Liong, J. See, K. Wong, and R. C.-W. Phan, “Automatic micro-expression recognition from long video using a single spotted apex.”

75. S.-T. Liong, J. See, R. C.-W. Phan, Y.-H. Oh, A. C. Le Ngo, K. Wong, and S.-W. Tan, “Spontaneous subtle expression detec- tion and recognition based on facial strain,” *Signal Processing: Image Communication*, vol. 47, pp. 170–182, 2016.

76. Y.-H. Oh, A. C. Le Ngo, R. C.-W. Phari, J. See, and H.-C. Ling, “Intrinsic two-dimensional local structures for micro-expression recognition,” in *Acoustics, Speech and Signal Processing (ICASSP), 2016 IEEE International Conference on*. IEEE, 2016, pp. 1851–1855.

77. S.-J. Wang, W.-J. Yan, T. Sun, G. Zhao, and X. Fu, “Sparse tensor canonical correlation analysis for micro-expression recognition,” *Neurocomputing*, vol. 214, pp. 218–232, 2016.

78. H. Zheng, X. Geng, and Z. Yang, “A relaxed k-svd algorithm for spontaneous micro-expression recognition,” in *Pacific Rim International Conference on Artificial Intelligence*. Springer, 2016, pp. 692–699.

79. D. H. Kim, W. J. Baddar, and Y. M. Ro, “Micro-expression recognition with expression-state constrained spatio-temporal feature representations,” in *Proceedings of the 2016 ACM on Multimedia Conference*. ACM, 2016, pp. 382–386.

80. H. Zheng, “Micro-expression recognition based on 2d gabor filter and sparse representation,” in *Journal of Physics: Conference Series*, vol. 787, no. 1. IOP Publishing, 2017, p. 012013.

81. X. Ben, X. Jia, R. Yan, X. Zhang, and W. Meng, “Learning effective binary descriptors for micro-expression recognition transferred by macro-information,” *Pattern Recognition Letters*, 2017.

82. S. Happy and A. Routray, “Fuzzy histogram of optical flow orientations for micro-expression recognition,” *IEEE Transactions on Affective Computing*, 2017.

83. X.-l. Hao and M. Tian, “Deep belief network based on double weber local descriptor in micro-expression recognition,” in *Ad- vanced Multimedia and Ubiquitous Engineering*. Springer, 2017, pp. 419–425.

84. M. Peng, C. Wang, T. Chen, G. Liu, and X. Fu, “Dual temporal scale convolutional neural network for micro-expression recogni- tion,” *Frontiers in psychology*, vol. 8, p. 1745, 2017.

85. X. Zhu, X. Ben, S. Liu, R. Yan, and W. Meng, “Coupled source do- main targetized with updating tag vectors for micro-expression recognition,” *Multimedia Tools and Applications*, vol. 77, no. 3, pp. 3105–3124, 2018.

86. A. J. Smola and B. Scho ̈lkopf, “A tutorial on support vector regression,” *Statistics and computing*, vol. 14, no. 3, pp. 199–222, 2004.

87. G. McKeown, M. Valstar, R. Cowie, M. Pantic, and M. Schroder, “The semaine database: Annotated multimodal records of emo- tionally colored conversations between a person and a limited agent,” *IEEE Transactions on Affective Computing*, vol. 3, no. 1, pp. 5–17, 2012.

88. S. Happy and A. Routray, “Recognizing subtle micro-facial ex- pressions using fuzzy histogram of optical flow orientations and feature selection methods,” in *Computational Intelligence for Pattern Recognition*. Springer, 2018, pp. 341–368.

89. Y. LeCun, Y. Bengio, and G. Hinton, “Deep learning,” *Nature*, vol. 521, no. 7553, pp. 436–444, 2015.

90. L. Deng and D. Yu, “Deep learning: Methods and applications,” *Foundations and Trends in Signal Processing*, vol. 7, no. 34, pp. 197–387, 2014. [Online]. Available: http://dx.doi.org/10.1561/ 2000000039

91. Y. LeCun, L. Bottou, Y. Bengio, and P. Haffner, “Gradient-based learning applied to document recognition,” *Proceedings of the IEEE*, vol. 86, no. 11, pp. 2278–2324, 1998.

92. C. Szegedy, W. Liu, Y. Jia, P. Sermanet, S. Reed, D. Anguelov, D. Erhan, V. Vanhoucke, and A. Rabinovich, “Going deeper with convolutions,” in *Proceedings of the IEEE Conference on Computer Vision and Pattern Recognition*, 2015, pp. 1–9.

93. A. Krizhevsky, I. Sutskever, and G. E. Hinton, “Imagenet classifi- cation with deep convolutional neural networks,” in *Advances in neural information processing systems*, 2012, pp. 1097–1105.

94. S. Ji, W. Xu, M. Yang, and K. Yu, “3d convolutional neural networks for human action recognition,” *IEEE transactions on pattern analysis and machine intelligence*, vol. 35, no. 1, pp. 221–231, 2013.

95. A. Karpathy, G. Toderici, S. Shetty, T. Leung, R. Sukthankar, and L. Fei-Fei, “Large-scale video classification with convolutional neural networks,” in *Proceedings of the IEEE conference on Computer Vision and Pattern Recognition*, 2014, pp. 1725–1732.

96. J. Yue-Hei Ng, M. Hausknecht, S. Vijayanarasimhan, O. Vinyals, R. Monga, and G. Toderici, “Beyond short snippets: Deep net- works for video classification,” in *Proceedings of the IEEE confer- ence on computer vision and pattern recognition*, 2015, pp. 4694–4702.

97. D. Tran, L. Bourdev, R. Fergus, L. Torresani, and M. Paluri, “Learning spatiotemporal features with 3d convolutional net- works,” in *Proceedings of the IEEE International Conference on Computer Vision*, 2015, pp. 4489–4497.

98. M. J. Lyons, S. Akamatsu, M. Kamachi, J. Gyoba, and J. Budynek, “The japanese female facial expression (jaffe) database,” in *Pro- ceedings of third international conference on automatic face and gesture recognition*, 1998, pp. 14–16.

99. M. H. Yap, H. Ugail, and R. Zwiggelaar, “Facial behavioral analysis: A case study in deception detection,” *British Journal of Applied Science & Technology*, vol. 4, no. 10, p. 1485, 2014.

100. L. Breiman, “Random forests,” *Machine learning*, vol. 45, no. 1, pp. 5–32, 2001.

101. T. Kanade, J. F. Cohn, and Y. Tian, “Comprehensive database for facial expression analysis,” in *Automatic Face and Gesture Recognition, 2000. Proceedings. Fourth IEEE International Conference on*. IEEE, 2000, pp. 46–53.

102. C. Harris and M. Stephens, “A combined corner and edge detec- tor.” in *Alvey vision conference*, vol. 15, no. 50. Citeseer, 1988, pp. 10–5244.

103. D.K.Jain,Z.Zhang,andK.Huang,“Randomwalk-basedfeature learning for micro-expression recognition,” *Pattern Recognition Letters*, 2018.

104. P. Baldi, S. Brunak, Y. Chauvin, C. A. Andersen, and H. Nielsen, “Assessing the accuracy of prediction algorithms for classifica- tion: an overview,” *Bioinformatics*, vol. 16, no. 5, pp. 412–424, 2000.

105. P. Ekman and W. V. Friesen, *Facial Action Coding System: Investgator’s Guide*. Consulting Psychologists Press, 1978.

106. W.-J. Yan, S.-J. Wang, Y.-J. Liu, Q. Wu, and X. Fu, “For micro- expression recognition: Database and suggestions,” *Neurocomput- ing*, vol. 136, pp. 82–87, 2014.

107. A. K. Davison, W. Merghani, and M. H. Yap, “Objective classes for micro-facial expression recognition,” *arXiv preprint arXiv:1708.07549*, 2017.

108. A. K. Davison, “Micro-facial movement detection using spatio- temporal features,” Ph.D. dissertation, Manchester Metropolitan University, 2016.

109. A. Moilanen, G. Zhao, and M. Pietikainen, “Spotting rapid facial movements from videos using appearance-based feature difference analysis,” in *Pattern Recognition (ICPR), 2014 22nd International Conference on*, Aug 2014, pp. 1722–1727.

110. Z. Xia, X. Feng, J. Peng, X. Peng, and G. Zhao, “Spontaneous micro-expression spotting via geometric deformation modeling,” *Computer Vision and Image Understanding*, 2015. [Online]. Available: http://www.sciencedirect.com/science/article/pii/ S1077314215002702

111. D. Patel, G. Zhao, and M. Pietika ̈inen, “Spatiotemporal integra- tion of optical flow vectors for micro-expression detection,” in *Advanced Concepts for Intelligent Vision Systems*. Springer, 2015, pp. 369–380.

112. A. K. Davison, M. H. Yap, and C. Lansley, “Micro-facial move- ment detection using individualised baselines and histogram- based descriptors,” in *Systems, Man, and Cybernetics (SMC), 2015 IEEE International Conference on*. IEEE, 2015, pp. 1864–1869.

113. M. Shreve, J. Brizzi, S. Fefilatyev, T. Luguev, D. Goldgof, and S. Sarkar, “Automatic expression spotting in videos,” *Image and Vision Computing*, vol. 32, no. 8, pp. 476 – 486, 2014.

114. M.D.Zeilerand, R.Fergus,“Visualizingandunderstandingcon- volutional networks,” in *European conference on computer vision*. Springer, 2014, pp. 818–833.

115. B. Schuller, B. Vlasenko, F. Eyben, M. Wollmer, A. Stuhlsatz, A. Wendemuth, and G. Rigoll, “Cross-corpus acoustic emotion recognition: Variances and strategies,” *IEEE Transactions on Affec- tive Computing*, vol. 1, no. 2, pp. 119–131, 2010.