



Fig. 8. MAE obtained at different learning rates

Conclusion

In this paper we analyzed performance measure MAE for human age estimation by building neural network model (NN) trained using Trainlm, Trainsecg and Traingdm training algorithms. NN outperforms when trained with Trainlm algorithm compared to other algorithm. This shows that Trainlm is more efficient algorithm.

References

- [1] X. Geng, Y. Fu, and K. S. Miles, "Automatic Facial Age Estimation," 11th Pacific Rim Int. Conf. Artif. Intell., pp. 1–130, 2010.
- [2] A. Lanitis, C. Draganova, and C. Christodoulou, "Comparing Different Classifiers for Automatic Age Estimation," IEEE Trans. Syst. Man, Cybern. Part B Cybern., vol. 34, no. 1, pp. 621–628, 2004.
- [3] Z. Yang and H. Ai, "Demographic Classification with Local Binary Patterns," Adv. Biometrics, pp. 464–473.
- [4] C.-W. L. and H. Y. M. L. Chung-Chun Wang, Yi-Chueh Su, Chiou-Ting Hsu, "Bayesian age estimation on face images," in 2009 IEEE International Conference on Multimedia and Expo, New York, NY, 2009, pp. 282–285.
- [5] X. Geng, Z. Zhou, S. Member, and K. Smith-miles, "Automatic Age Estimation Based on Facial Aging Patterns Automatic Age Estimation Based on Facial Aging Patterns," Pami, vol. 29, no. 200343, pp. 2234–2240, 2007.
- [6] Y. F. and T. S. Huang, "Human Age Estimation With Regression on Discriminative Aging Manifold," in IEEE Transactions on Multimedia, vol. 10, no. 4, pp. 578–584.
- [7] B. Ni, Z. Song, and S. Yan, "Web image mining towards universal age estimator," Proc. seventeen ACM Int. Conf. Multimed. - MM '09, p. 85, 2009.
- [8] G. Guo, G. Mu, Y. Fu, and T. S. Huang, "Human age estimation using bio-inspired features," 2009 IEEE Comput. Soc. Conf. Comput. Vis. Pattern Recognit. Work. CVPR Work. 2009, pp. 112–119, 2009.
- [9] G. Guo, Y. Fu, C. R. Dyer, and T. S. Huang, "Image-based human age estimation by manifold learning and locally adjusted robust regression," IEEE Trans. Image Process., vol. 17, no. 7, pp. 1178–1188, 2008.
- [10] Y. Z. Y. Zhang and D.-Y. Y. D.-Y. Yeung, "Multi-task warped Gaussian process for personalized age estimation," Comput. Vis. Pattern Recognit. (CVPR), 2010 IEEE Conf., pp. 2622–2629, 2010.
- [11] Kuang-Yu Chang and Chu-Song Chen, "A Learning Framework for Age Rank Estimation Based on Face Images With Scattering Transform," IEEE Trans. Image Process., vol. 24, no. 3, pp. 785–798, 2015.
- [12] D. T. and J. Y. S. Wang, "Relative Attribute SVM+ Learning for Age Estimation," IEEE Trans. Cybern., vol. 46, n, pp. 827–839.
- [13] Y. Sun, X. Wang, and X. Tang, "Deep Learning Face Representation From Predicting 10 000 Classes," Cvpr, pp. 1891–1898, 2014.
- [14] K. S. K. and B. E. R. A. A. Shejul, "Comprehensive review on facial based human age estimation," in International conference on Energy, Data Analytics & Soft Computing (ICECDS), 2017, pp. 3211–3216.