DAFTAR PUSTAKA

[1] Disfiyant Glienmourinsie, "Pasar Modal Beri Kontribusi 12% ke Ekonomi RI," *Sindonews*, 10-Mar-2017. [Online]. Available: https://ekbis.sindonews.com/read/1187148/32/pasar-modal-beri-kontribusi-12-ke-ekonomi-ri-1489137620. [Accessed: 06-Jan-2019].

[2] "PT Bursa Efek Indonesia," *PT Bursa Efek Indonesia*. [Online]. Available: http://www.idx.co.id. [Accessed: 08-Feb-2019].

[3] Monica Wareza, "Jumlah Investor Individu di Pasar Modal 756 Ribu," *CNBC Indonesia*, 09-Sep-2018. [Online]. Available: https://www.cnbcindonesia.com/market/20180909122202-17-32360/jumlah-investor-individu-di-pasar-modal-756-ribu. [Accessed: 02-Jan-2019].

[4] Isna Rifka Sri Rahayu, "BEI: Masyarakat Harus Nikmati Keuntungan Investasi Saham," *iNews.id*, 26-Jan-2018. [Online]. Available: https://www.inews.id/finance/bisnis/bei-masyarakat-harus-nikmati-keuntungan-investasi-saham/42105. [Accessed: 02-Feb-2019].

[5] A. Elder, *The New Trading for a Living: Psychology, Discipline, Trading Tools and Systems, Risk Control, Trade Management*, 1 edition. Hoboken, New Jersey: Wiley, 2014.

[6] J. J. Murphy, *Technical Analysis of the Financial Markets: A Comprehensive Guide to Trading Methods and Applications*, SUB UPD EX edition. New York: New York Institute of Finance, 1999.

[7] R. S. Tsay, "Financial Time Series and Their Characteristics," 2010, pp. 1–27.

[8] T. Mikosch and C. Stărică, "Nonstationarities in Financial Time Series, the Long-Range Dependence, and the IGARCH Effects," *The Review of Economics and Statistics*, vol. 86, no. 1, pp. 378–390, Feb. 2004.

[9] J. T. Barkoulas and C. F. Baum, "Long-term dependence in stock returns," *Economics Letters*, vol. 53, no. 3, pp. 253–259, Dec. 1996.

[10] C. Christodoulou-Volos and F. M. Siokis, "Long range dependence in stock market returns," *Applied Financial Economics*, vol. 16, no. 18, pp. 1331–1338, Dec. 2006.

[11] R. Cont, "Long range dependence in financial markets," in *Fractals in Engineering*, J. Lévy-Véhel and E. Lutton, Eds. London: Springer-Verlag, 2005, pp. 159–179.

[12] J. A. Bollinger, *Bollinger on Bollinger Bands*, 1 edition. New York: McGraw-Hill Education, 2001.

[13] M. A. Lim, *The Handbook of Technical Analysis + Test Bank: The Practitioner's Comprehensive Guide to Technical Analysis*, 1 edition. Wiley, 2015.

[14] K. Chen, Y. Zhou, and F. Dai, "A LSTM-based method for stock returns prediction: A case study of China stock market," in *2015 IEEE International*

Conference on Big Data (Big Data), 2015, pp. 2823–2824.

[15] H. D. Huynh, L. M. Dang, and D. Duong, "A New Model for Stock Price Movements Prediction Using Deep Neural Network," in *Proceedings of the Eighth International Symposium on Information and Communication Technology*, New York, NY, USA, 2017, pp. 57–62.

[16] T. Fischer and C. Krauss, "Deep learning with long short-term memory networks for financial market predictions," *European Journal of Operational Research*, vol. 270, no. 2, pp. 654–669, Oct. 2018.

[17] D. P. Persio Luca ;. Honchar, Oleksandr and O. Honchar, "Artificial Neural Networks architectures for stock price prediction: comparisons and applications," *International Journal of Circuits, Systems and Signal Processing*, vol. 10, pp. 403–413, 2016.

[18] W. Li and J. Liao, "A comparative study on trend forecasting approach for stock price time series," in *2017 11th IEEE International Conference on Anti-counterfeiting, Security, and Identification (ASID)*, 2017, pp. 74–78.

[19] D. M. Q. Nelson, A. C. M. Pereira, and R. A. de Oliveira, "Stock market's price movement prediction with LSTM neural networks," in *2017 International Joint Conference on Neural Networks (IJCNN)*, 2017, pp. 1419–1426.

[20] Z. Li and V. Tam, "A comparative study of a recurrent neural network and support vector machine for predicting price movements of stocks of different volatilites," in *2017 IEEE Symposium Series on Computational Intelligence (SSCI)*, 2017, pp. 1–8.

[21] Z. Li and V. Tam, "Combining the real-time wavelet denoising and long-short-term-memory neural network for predicting stock indexes," in *2017 IEEE Symposium Series on Computational Intelligence (SSCI)*, 2017, pp. 1–8.

[22] B. M. Henrique, V. A. Sobreiro, and H. Kimura, "Literature review: Machine learning techniques applied to financial market prediction," *Expert Systems with Applications*, vol. 124, pp. 226–251, Jun. 2019.

[23] D. A. Jackson, "Stopping Rules in Principal Components Analysis: A Comparison of Heuristical and Statistical Approaches," *Ecology*, vol. 74, no. 8, pp. 2204–2214, 1993.

[24] R. Cangelosi and A. Goriely, "Component retention in principal component analysis with application to cDNA microarray data," *Biology Direct*, vol. 2, no. 1, p. 2, Jan. 2007.

[25] N. Reimers and I. Gurevych, "Optimal Hyperparameters for Deep LSTM-Networks for Sequence Labeling Tasks," *arXiv:1707.06799 [cs]*, Jul. 2017.

[26] "Algorithmic trading," *Wikipedia*. 17-Feb-2019.

[27] T. Hendershott, C. M. Jones, and A. J. Menkveld, "Does Algorithmic Trading Improve Liquidity?," *The Journal of Finance*, vol. 66, no. 1, pp. 1–33, Feb. 2011.

[28] C.-J. Huang, D.-X. Yang, and Y.-T. Chuang, "Application of wrapper approach and composite classifier to the stock trend prediction," *Expert Systems with Applications*, vol. 34, no. 4, pp. 2870–2878, May 2008.

[29] L.-Y. Wei and C.-H. Cheng, "A hybrid recurrent neural networks model

based on synthesis features to forecast the Taiwan stock market," *International Journal of Innovative Computing, Information and Control*, vol. 8, no. 8, pp. 5559–5571, 2012.

[30] A. Ç. Pehlivanlı, B. Aşıkgil, and G. Gülay, "Indicator selection with committee decision of filter methods for stock market price trend in ISE," *Applied Soft Computing*, vol. 49, pp. 792–800, Dec. 2016.

[31] Y. Son, D. Noh, and J. Lee, "Forecasting trends of high-frequency KOSPI200 index data using learning classifiers," *Expert Systems with Applications*, vol. 39, no. 14, pp. 11607–11615, Oct. 2012.

[32] X. Lin, Z. Yang, and Y. Song, "Short-term stock price prediction based on echo state networks," *Expert Systems with Applications*, vol. 36, no. 3, Part 2, pp. 7313–7317, Apr. 2009.

[33] M. Waqar, H. Dawood, P. Guo, M. B. Shahnawaz, and M. A. Ghazanfar, "Prediction of Stock Market by Principal Component Analysis," in *2017 13th International Conference on Computational Intelligence and Security (CIS)*, 2017, pp. 599–602.

[34] X. Zhong and D. Enke, "A comprehensive cluster and classification mining procedure for daily stock market return forecasting," *Neurocomputing*, vol. 267, pp. 152–168, Dec. 2017.

[35] R. Singh and S. Srivastava, "Stock prediction using deep learning," *Multimedia Tools and Applications*, vol. 76, no. 18, pp. 18569–18584, 2017.

[36] T. Gao and Y. Chai, "Improving Stock Closing Price Prediction Using Recurrent Neural Network and Technical Indicators," *Neural Computation*, vol. 30, no. 10, pp. 2833–2854, Aug. 2018.

[37] P. Y. Mok, K. P. Lam, and H. S. Ng, "AN ICA design of intraday stock prediction models with automatic variable selection," presented at the IEEE International Conference on Neural Networks - Conference Proceedings, 2004, vol. 3, pp. 2135–2140.

[38] L.-J. Kao, C.-C. Chiu, C.-J. Lu, and J.-L. Yang, "Integration of nonlinear independent component analysis and support vector regression for stock price forecasting," *Neurocomputing*, vol. 99, pp. 534–542, Jan. 2013.

[39] H. Ince and T. B. Trafalis, "A hybrid forecasting model for stock market prediction," *Economic Computation and Economic Cybernetics Studies and Research*, vol. 51, no. 3, pp. 263–280, 2017.

[40] S. Barak, J. H. Dahooie, and T. Tichý, "Wrapper ANFIS-ICA method to do stock market timing and feature selection on the basis of Japanese Candlestick," *Expert Systems with Applications*, vol. 42, no. 23, pp. 9221–9235, Dec. 2015.

[41] W. Bao, J. Yue, and Y. Rao, "A deep learning framework for financial time series using stacked autoencoders and long-short term memory," *PLOS ONE*, vol. 12, no. 7, p. e0180944, Jul. 2017.

[42] C.-F. Tsai and Y.-C. Hsiao, "Combining multiple feature selection methods for stock prediction: Union, intersection, and multi-intersection approaches," *Decision Support Systems*, vol. 50, no. 1, pp. 258–269, Dec. 2010.

[43] Y. He, K. Fataliyev, and L. Wang, "Feature Selection for Stock Market Analysis," in *Neural Information Processing*, 2013, pp. 737–744.

[44] P.-C. Chang and J.-L. Wu, "A critical feature extraction by kernel PCA in stock trading model," *Soft Comput*, vol. 19, no. 5, pp. 1393–1408, May 2015.

[45] X. Zhong and D. Enke, "Forecasting daily stock market return using dimensionality reduction," *Expert Systems with Applications*, vol. 67, pp. 126–139, Jan. 2017.

[46] T. Vantuch, V. Snasel, and I. Zelinka, "Dimensionality Reduction Method's Comparison Based on Statistical Dependencies," *Procedia Computer Science*, vol. 83, pp. 1025–1031, Jan. 2016.

[47] J. Zahedi and M. M. Rounaghi, "Application of artificial neural network models and principal component analysis method in predicting stock prices on Tehran Stock Exchange," *Physica A: Statistical Mechanics and its Applications*, vol. 438, pp. 178–187, Nov. 2015.

[48] H. Shi and X. Liu, "Application on stock price prediction of Elman neural networks based on principal component analysis method," in *2014 11th International Computer Conference on Wavelet Actiev Media Technology and Information Processing(ICCWAMTIP)*, 2014, pp. 411–414.

[49] T. Gao, X. Li, Y. Chai, and Y. Tang, "Deep learning with stock indicators and two-dimensional principal component analysis for closing price prediction system," in *2016 7th IEEE International Conference on Software Engineering and Service Science (ICSESS)*, 2016, pp. 166–169.

[50] P. R. Peres-Neto, D. A. Jackson, and K. M. Somers, "How many principal components? stopping rules for determining the number of non-trivial axes revisited," *Computational Statistics & Data Analysis*, vol. 49, no. 4, pp. 974–997, Jun. 2005.

[51] C. L. Dunis, J. Laws, and A. Karathanasopoulos, "Modelling and Trading the Greek Stock Market with Hybrid ARMA-Neural NetworkModels," in *Financial Decision Making Using Computational Intelligence*, M. Doumpos, C. Zopounidis, and P. M. Pardalos, Eds. Boston, MA: Springer US, 2012, pp. 103–127.

[52] P. M. Elizabeth, F. Africano, and R. Parlindungan, "GARCH based volatility modeling in Indonesia stock exchange," *Advanced Science Letters*, vol. 23, no. 8, pp. 7187–7191, 2017.

[53] W. S. Gayo, J. D. Urrutia, J. M. F. Temple, J. R. D. Sandoval, and J. E. A. Sanglay, "Modeling Philippine Stock Exchange Composite Index using time series analysis," presented at the Journal of Physics: Conference Series, 2015, vol. 622.

[54] B. Labiad, A. Berrado, and L. Benabbou, "Machine learning techniques for short term stock movements classification for Moroccan stock exchange," in *2016 11th International Conference on Intelligent Systems: Theories and Applications (SITA)*, 2016, pp. 1–6.

[55] V. P. Upadhyay, S. Panwar, R. Panchariya, and R. Merugu, "Forecasting stock market movements using various kernel functions in support vector machine," presented at the ACM International Conference Proceeding Series, 2016, vol. 12-13-August-2016.

[56] Şenol D Özturan M., "Stock Price Direction Prediction Using Artificial Neural Network Approach: The Case of Turkey," *Journal of Artificial*

Intelligence, vol. 1, no. 2, pp. 70–77, Feb. 2008.

[57] Y. Kara, M. Acar Boyacioglu, and Ö. K. Baykan, "Predicting direction of stock price index movement using artificial neural networks and support vector machines: The sample of the Istanbul Stock Exchange," *Expert Systems with Applications*, vol. 38, no. 5, pp. 5311–5319, May 2011.

[58] P. Tüfekci, "Predicting the direction of movement for stock price index using machine learning methods," *Advances in Intelligent Systems and Computing*, vol. 427, pp. 477–492, 2016.

[59] P. Tüfekci, "Classification-based prediction models for stock price index movement," *Intelligent Data Analysis*, vol. 20, no. 2, pp. 357–376, 2016.

[60] Z. Bodie, A. Kane, and A. J. Marcus, *Investments*. McGraw-Hill, 2009.

[61] S. B. Achelis, *Technical Analysis from A to Z, 2nd Edition*. McGraw Hill Professional, 2000.

[62] J. W. Wilder, *New Concepts in Technical Trading Systems*. Greensboro, N.C: Trend Research, 1978.

[63] R. W. Colby, *The Encyclopedia Of Technical Market Indicators, Second Edition*. McGraw Hill Professional, 2002.

[64] G. Appel, *Technical Analysis: Power Tools for Active Investors*. Financial Times/Prentice Hall, 2005.

[65] B. Thinkers, *Commodity Channel Index (CCI) Trading Strategy: Clear Entry, Clear Stop Loss and Clear Profit Target*. .

[66] T. S. Chande and S. Kroll, *The new technical trader: boost your profit by plugging into the latest indicators*. Wiley, 1994.

[67] M. Pring, *The Definitive Guide to Momentum Indicators*, Har/Cdr edition. New York: Marketplace Books, 2009.

[68] P. J. Kaufman, *Trading Systems and Methods*. John Wiley & Sons, 2013.

[69] J. E. Granville, *Granville's New Key to Stock Market Profits*. Literary Licensing, LLC, 2011.

[70] I. T. Jolliffe, "A User's Guide to Principal Components," *Journal of the Royal Statistical Society: Series D (The Statistician)*, vol. 42, no. 1, pp. 76–77, Mar. 1993.

[71] S. Hochreiter and J. Schmidhuber, "Long Short-Term Memory," *Neural Comput.*, vol. 9, no. 8, pp. 1735–1780, Nov. 1997.

[72] M. Hermans and B. Schrauwen, "Training and Analysing Deep Recurrent Neural Networks," in *Advances in Neural Information Processing Systems 26*, C. J. C. Burges, L. Bottou, M. Welling, Z. Ghahramani, and K. Q. Weinberger, Eds. Curran Associates, Inc., 2013, pp. 190–198.

[73] R. Pascanu, C. Gulcehre, K. Cho, and Y. Bengio, "How to Construct Deep Recurrent Neural Networks," *arXiv:1312.6026 [cs, stat]*, Dec. 2013.

[74] A. Graves, A. Mohamed, and G. Hinton, "Speech Recognition with Deep Recurrent Neural Networks," *arXiv:1303.5778 [cs]*, Mar. 2013.

[75] N. Srivastava, G. Hinton, A. Krizhevsky, I. Sutskever, and R. Salakhutdinov, "Dropout: A Simple Way to Prevent Neural Networks from Overfitting," p. 30.

[76] G. E. Hinton, N. Srivastava, A. Krizhevsky, I. Sutskever, and R. R. Salakhutdinov, "Improving neural networks by preventing co-adaptation of

feature detectors," *arXiv:1207.0580 [cs]*, Jul. 2012.

[77] V. K. Bogullu, D. Enke, and C. H. Dagli, "Using neural networks and technical indicators for generating stock trading signals," *Intelligent Engineering Systems Through Artificial Neural Networks*, vol. 12, pp. 721–726, Jan. 2002.

[78] "Feature extraction from the electroencephalogram by adaptive segmentation - IEEE Journals & Magazine." [Online]. Available: https://ieeexplore.ieee.org/document/1454812?arnumber=1454812. [Accessed: 16-Mar-2019].

[79] J. Demsˇar and J. Demsar, "Statistical Comparisons of Classifiers over Multiple Data Sets," p. 30.