

- [1] Andy Thomas. *How to easily build a powerful deep learning language model*, 2019. <https://adventuresinmachinelearning.com/keras-lstm-tutorial>.
- [2] Massimo Caccia, Lucas Caccia, William Fedus, Hugo Larochelle, Joelle Pineau, and Laurent Charlin. Language gans falling short. *arXiv preprint arXiv:1811.02549*, 2018.
- [3] Xiang Zhang and Yann LeCun. Text understanding from scratch. *arXiv preprint arXiv:1502.01710*, 2015.
- [4] J.C. Moyer, L. Sowder, J. Threadgill-Sowder, and M.B. Moyer. Story problem formats: Drawn versus verbal versus telegraphic. *Journal for Research in Mathematics Education*, pages 342–351, 1984.
- [5] TH. Wen, M. Gasic, N. Mrksic, PH. Su, D. Vandyke, and S. Young. Semantically conditioned lstm-based natural language generation for spoken dialogue systems. *arXiv preprint arXiv:1508.01745*, 2015.
- [6] M. Roemmele. Writing stories with help from recurrent neural networks. In *Thirtieth AAAI Conference on Artificial Intelligence*, 2016.
- [7] P. Potash, A. Romanov, and A. Rumshisky. Ghostwriter: Using an lstm for automatic rap lyric generation. In *Proceedings of the 2015 Conference on Empirical Methods in Natural Language Processing*, pages 1919–1924, 2015.
- [8] Q. Zhou, N. Yang, F. Wei, C. Tan, H. Bao, and M. Zhou. Neural question generation from text: A preliminary study. In *National CCF Conference on Natural Language Processing and Chinese Computing*, pages 662–671. Springer, 2017.
- [9] L. Leppanen, M. Munezero, M. Granroth-Wilding, and H. Toivonen. Data-driven news generation for automated journalism. In *Proceedings of the 10th International Conference on Natural Language Generation*, pages 188–197, 2017.
- [10] Oleksandr Polozov, Eleanor O’Rourke, Adam M Smith, Luke Zettlemoyer, Sumit Gulwani, and Zoran Popović. Personalized mathematical word problem generation. In *Twenty-Fourth International Joint Conference on Artificial Intelligence*, 2015.

- [11] Rohit Singh, Sumit Gulwani, and Sriram Rajamani. Automatically generating algebra problems. In *Twenty-Sixth AAAI Conference on Artificial Intelligence*, 2012.
- [12] Rik Koncel-Kedziorski, Ioannis Konstas, Luke Zettlemoyer, and Hannaneh Hajishirzi. A theme-rewriting approach for generating algebra word problems. *arXiv preprint arXiv:1610.06210*, 2016.
- [13] K. Wang and Z. Su. Dimensionally guided synthesis of mathematical word problems. In *IJCAI*, pages 2661–2668, 2016.
- [14] S. Williams. Generating mathematical word problems. In *2011 AAAI Fall symposium series*, 2011.
- [15] Paul Deane and Kathleen Sheehan. Automatic item generation via frame semantics: Natural language generation of math word problems. 2003.
- [16] David E Rumelhart, Geoffrey E Hinton, and Ronald J Williams. Learning representations by back-propagating errors. *nature*, 323(6088):533–536, 1986.
- [17] Robert Hecht-Nielsen. Theory of the backpropagation neural network. In *Neural networks for perception*, pages 65–93. Elsevier, 1992.
- [18] Sepp Hochreiter and Jürgen Schmidhuber. Long short-term memory. *Neural computation*, 9(8):1735–1780, 1997.
- [19] Felix A Gers, Jürgen Schmidhuber, and Fred Cummins. Learning to forget: Continual prediction with lstm. 1999.
- [20] Richard S Sutton, Andrew G Barto, et al. *Introduction to reinforcement learning*, volume 2. MIT press Cambridge, 1998.
- [21] Stuart J Russell and Peter Norvig. *Artificial intelligence: a modern approach*. Malaysia; Pearson Education Limited,, 2016.
- [22] Geoffrey E Hinton, Terrence Joseph Sejnowski, Tomaso A Poggio, et al. *Unsupervised learning: foundations of neural computation*. MIT press, 1999.

- [23] Shai Fine, Yoram Singer, and Naftali Tishby. The hierarchical hidden markov model: Analysis and applications. *Machine learning*, 32(1):41–62, 1998.
- [24] Ian Goodfellow, Jean Pouget-Abadie, Mehdi Mirza, Bing Xu, David Warde-Farley, Sherjil Ozair, Aaron Courville, and Yoshua Bengio. Generative adversarial nets. In *Advances in neural information processing systems*, pages 2672–2680, 2014.
- [25] Tong Che, Yanran Li, Athul Paul Jacob, Yoshua Bengio, and Wenjie Li. Mode regularized generative adversarial networks. *arXiv preprint arXiv:1612.02136*, 2016.
- [26] Ehud Reiter and Robert Dale. Building applied natural language generation systems. *Natural Language Engineering*, 3(1):57–87, 1997.
- [27] Ibrahim Adeyanju. Generating weather forecast texts with case based reasoning. *arXiv preprint arXiv:1509.01023*, 2015.
- [28] Joy Mahapatra, Sudip Kumar Naskar, and Sivaji Bandyopadhyay. Statistical natural language generation from tabular non-textual data. In *Proceedings of the 9th International Natural Language Generation conference*, pages 143–152, 2016.
- [29] Ehud Reiter, Somayajulu G Sripada, and Roma Robertson. Acquiring correct knowledge for natural language generation. *Journal of Artificial Intelligence Research*, 18:491–516, 2003.
- [30] Ehud Reiter, Somayajulu Sripada, Jim Hunter, Jin Yu, and Ian Davy. Choosing words in computer-generated weather forecasts. *Artificial Intelligence*, 167(1-2):137–169, 2005.
- [31] Eli Goldberg, Norbert Driedger, and Richard I Kittredge. Using natural-language processing to produce weather forecasts. *IEEE Expert*, 9(2):45–53, 1994.
- [32] Kathleen McKeown, Karen Kukich, and James Shaw. Practical issues in automatic documentation generation. In *Proceedings of the fourth conference on Applied natural language processing*, pages 7–14. Association for Computational Linguistics, 1994.

- [33] Irene Langkilde and Kevin Knight. Generation that exploits corpus-based statistical knowledge. In *Proceedings of the 17th international conference on Computational linguistics-Volume 1*, pages 704–710. Association for Computational Linguistics, 1998.
- [34] Kevin Knight and Vasileios Hatzivassiloglou. Two-level, many-paths generation. In *Proceedings of the 33rd annual meeting on Association for Computational Linguistics*, pages 252–260. Association for Computational Linguistics, 1995.
- [35] John S White. *Envisioning Machine Translation in the Information Future: 4th Conference of the Association for Machine Translation in the Americas, AMTA 2000, Cuernavaca, Mexico, October 10-14, 2000 Proceedings*. Springer Science & Business Media, 2000.
- [36] Alice Oh and Alexander Rudnicky. Stochastic language generation for spoken dialogue systems. In *ANLP-NAACL 2000 Workshop: Conversational Systems, 2000*.
- [37] Ilya Sutskever, James Martens, and Geoffrey E Hinton. Generating text with recurrent neural networks. In *Proceedings of the 28th international conference on machine learning (ICML-11)*, pages 1017–1024, 2011.
- [38] Shimei Pan and James Shaw. Segue: A hybrid case-based surface natural language generator. In *International Conference on Natural Language Generation*, pages 130–140. Springer, 2004.
- [39] John G Kemeny and J Laurie Snell. *Markov chains*. Springer-Verlag, New York, 1976.
- [40] Jules Gagnon-Marchand, Hamed Sadeghi, Md Akmal Haidar, and Mehdi Rezagholizadeh. Salsa-text: self attentive latent space based adversarial text generation. In *Canadian Conference on Artificial Intelligence*, pages 119–131. Springer, 2019.
- [41] Sidi Lu, Yaoming Zhu, Weinan Zhang, Jun Wang, and Yong Yu. Neural text generation: past, present and beyond. *arXiv preprint arXiv:1803.07133*, 2018.

- [42] Alex Graves. Generating sequences with recurrent neural networks. *arXiv preprint arXiv:1308.0850*, 2013.
- [43] Hongyu Guo. Generating text with deep reinforcement learning. *arXiv preprint arXiv:1510.09202*, 2015.
- [44] Wei Xu and Alex Rudnicky. Can artificial neural networks learn language models? In *Sixth international conference on spoken language processing*, 2000.
- [45] Yoshua Bengio, Réjean Ducharme, Pascal Vincent, and Christian Jauvin. A neural probabilistic language model. *Journal of machine learning research*, 3(Feb):1137–1155, 2003.
- [46] Stephen Merity, Nitish Shirish Keskar, and Richard Socher. An analysis of neural language modeling at multiple scales. *arXiv preprint arXiv:1803.08240*, 2018.
- [47] Li Wan, Matthew Zeiler, Sixin Zhang, Yann Le Cun, and Rob Fergus. Regularization of neural networks using dropconnect. In *International conference on machine learning*, pages 1058–1066, 2013.
- [48] Léon Bottou. Stochastic gradient learning in neural networks. *Proceedings of Neuro-Nimes*, 91(8):12, 1991.
- [49] Oliver Lemon. Adaptive natural language generation in dialogue using reinforcement learning. *Proc. SEM-dial*, pages 141–148, 2008.
- [50] Gabriel Dulac-Arnold, Richard Evans, Hado van Hasselt, Peter Sunehag, Timothy Lillicrap, Jonathan Hunt, Timothy Mann, Theophane Weber, Thomas Degris, and Ben Coppin. Deep reinforcement learning in large discrete action spaces. *arXiv preprint arXiv:1512.07679*, 2015.
- [51] Liqun Chen, Shuyang Dai, Chenyang Tao, Haichao Zhang, Zhe Gan, Dinghan Shen, Yizhe Zhang, Guoyin Wang, Ruiyi Zhang, and Lawrence Carin. Adversarial text generation via feature-mover’s distance. In *Advances in Neural Information Processing Systems*, pages 4666–4677, 2018.

- [52] Lantao Yu, Weinan Zhang, Jun Wang, and Yong Yu. Seqgan: Sequence generative adversarial nets with policy gradient. In *Thirty-First AAAI Conference on Artificial Intelligence*, 2017.
- [53] Tong Che, Yanran Li, Ruixiang Zhang, R Devon Hjelm, Wenjie Li, Yangqiu Song, and Yoshua Bengio. Maximum-likelihood augmented discrete generative adversarial networks. *arXiv preprint arXiv:1702.07983*, 2017.
- [54] Kevin Lin, Dianqi Li, Xiaodong He, Zhengyou Zhang, and Ming-Ting Sun. Adversarial ranking for language generation. In *Advances in Neural Information Processing Systems*, pages 3155–3165, 2017.
- [55] Jiaxian Guo, Sidi Lu, Han Cai, Weinan Zhang, Yong Yu, and Jun Wang. Long text generation via adversarial training with leaked information. In *Thirty-Second AAAI Conference on Artificial Intelligence*, 2018.
- [56] William Fedus, Ian Goodfellow, and Andrew M Dai. Maskgan: better text generation via filling in the_. *arXiv preprint arXiv:1801.07736*, 2018.
- [57] Yizhe Zhang, Zhe Gan, Kai Fan, Zhi Chen, Ricardo Henao, Dinghan Shen, and Lawrence Carin. Adversarial feature matching for text generation. In *Proceedings of the 34th International Conference on Machine Learning-Volume 70*, pages 4006–4015. JMLR. org, 2017.
- [58] Matt J Kusner and José Miguel Hernández-Lobato. Gans for sequences of discrete elements with the gumbel-softmax distribution. *arXiv preprint arXiv:1611.04051*, 2016.
- [59] Ian Goodfellow, Yoshua Bengio, and Aaron Courville. *Deep learning*. MIT press, 2016.
- [60] Eric Jang, Shixiang Gu, and Ben Poole. Categorical reparameterization with gumbel-softmax. *arXiv preprint arXiv:1611.01144*, 2016.
- [61] Brian Langner and Alan Black. Mountain: A translation-based approach to natural

- language generation for dialog systems. *Proc. of IWSDS 2009, Irsee, Germany, 2009.*
- [62] Anja Belz and Eric Kow. System building cost vs. output quality in data-to-text generation. In *Proceedings of the 12th European Workshop on Natural Language Generation (ENLG 2009)*, pages 16–24, 2009.
- [63] Philipp Koehn, Franz Josef Och, and Daniel Marcu. Statistical phrase-based translation. In *Proceedings of the 2003 Conference of the North American Chapter of the Association for Computational Linguistics on Human Language Technology-Volume 1*, pages 48–54. Association for Computational Linguistics, 2003.
- [64] Philipp Koehn, Hieu Hoang, Alexandra Birch, Chris Callison-Burch, Marcello Federico, Nicola Bertoldi, Brooke Cowan, Wade Shen, Christine Moran, Richard Zens, et al. Moses: Open source toolkit for statistical machine translation. In *Proceedings of the 45th annual meeting of the association for computational linguistics companion volume proceedings of the demo and poster sessions*, pages 177–180, 2007.
- [65] Anja Belz. Automatic generation of weather forecast texts using comprehensive probabilistic generation-space models. *Natural Language Engineering*, 14(4):431–455, 2008.
- [66] Kishore Papineni, Salim Roukos, Todd Ward, and Wei-Jing Zhu. Bleu: a method for automatic evaluation of machine translation. In *Proceedings of the 40th annual meeting on association for computational linguistics*, pages 311–318. Association for Computational Linguistics, 2002.
- [67] Ondřej Cífka, Aliaksei Severyn, Enrique Alfonseca, and Katja Filippova. Eval all, trust a few, do wrong to none: Comparing sentence generation models. *arXiv preprint arXiv:1804.07972*, 2018.
- [68] M. Buscema. Back propagation neural networks. *Substance use & misuse*, 33(2):233–270, 1998.
- [69] R. Singh, S. Gulwani, and S. Rajamani. Automatically generating algebra problems. In *Twenty-Sixth AAAI Conference on Artificial Intelligence*, 2012.

- [70] Roger C Schank and Robert P Abelson. *Scripts, plans, goals, and understanding: An inquiry into human knowledge structures*. Psychology Press, 2013.
- [71] Emmon Bach and Robert Harms. Universals in linguistic theory. 1968.
- [72] Martin Gebser, Roland Kaminski, Benjamin Kaufmann, and Torsten Schaub. Answer set solving in practice. *Synthesis lectures on artificial intelligence and machine learning*, 6(3):1–238, 2012.
- [73] Jacob T Schwartz. Fast probabilistic algorithms for verification of polynomial identities. *Journal of the ACM (JACM)*, 27(4):701–717, 1980.
- [74] Sandra Williams. Generating mathematical word problems. In *2011 AAAI Fall symposium series*, 2011.
- [75] Marco Ponza, Paolo Ferragina, and Francesco Piccinno. Swat: A system for detecting salient wikipedia entities in texts. *Computational Intelligence*, 2019.
- [76] Ke Wang and Zhendong Su. Dimensionally guided synthesis of mathematical word problems. In *IJCAI*, pages 2661–2668, 2016.
- [77] Gábor Melis, Chris Dyer, and Phil Blunsom. On the state of the art of evaluation in neural language models. *arXiv preprint arXiv:1707.05589*, 2017.
- [78] Chris J Maddison, Andriy Mnih, and Yee Whye Teh. The concrete distribution: A continuous relaxation of discrete random variables. *arXiv preprint arXiv:1611.00712*, 2016.
- [79] Jason Brownlee. *Why One-Hot Encode Data in Machine Learning*, 2020. <https://machinelearningmastery.com/why-one-hot-encode-data-in-machine-learning>.
- [80] Diederik P Kingma and Jimmy Ba. Adam: A method for stochastic optimization. *arXiv preprint arXiv:1412.6980*, 2014.
- [81] Rico Sennrich and Barry Haddow. Linguistic input features improve neural machine translation. In *Proceedings of the First Conference on Machine Translation: Volume*

- I, Research Papers*, pages 83–91, Berlin, Germany, August 2016. Association for Computational Linguistics.
- [82] Manex Agirrezabal, Bertol Arrieta, Aitzol Astigarraga, and Mans Hulden. Pos-tag based poetry generation with wordnet. In *Proceedings of the 14th European Workshop on Natural Language Generation*, pages 162–166, 2013.
- [83] Tomas Mikolov, Ilya Sutskever, Kai Chen, Greg S Corrado, and Jeff Dean. Distributed representations of words and phrases and their compositionality. In *Advances in neural information processing systems*, pages 3111–3119, 2013.
- [84] Jeffrey Pennington, Richard Socher, and Christopher D Manning. Glove: Global vectors for word representation. In *Proceedings of the 2014 conference on empirical methods in natural language processing (EMNLP)*, pages 1532–1543, 2014.
- [85] S. Rajpirathap and S. Ranathunga. Model answer generation for word-type questions in elementary mathematics. In *International Conference on Applications of Natural Language to Information Systems*, pages 17–28. Springer, 2019.
- [86] Edward Loper and Steven Bird. Nltk: the natural language toolkit. *arXiv preprint cs/0205028*, 2002.
- [87] S. Fernando, S. Ranathunga, S. Jayasena, and G. Dias. Comprehensive part-of-speech tag set and svm based pos tagger for sinhala. In *Proceedings of the 6th Workshop on South and Southeast Asian Natural Language Processing (WSSANLP2016)*, pages 173–182, 2016.
- [88] M. Thayaparan, S. Ranathunga, and U. Thayasivam. Graph based semi-supervised learning approach for tamil pos tagging. In *Proceedings of the Eleventh International Conference on Language Resources and Evaluation (LREC 2018)*, 2018.
- [89] A. Vaswani, N. Shazeer, N. Parmar, J. Uszkoreit, L. Jones, A. N. Gomez, Łu. Kaiser, and I. Polosukhin. Attention is all you need. In *Advances in neural information processing systems*, pages 5998–6008, 2017.

- [90] Z. Xie. Neural text generation: A practical guide. *arXiv preprint arXiv:1711.09534*, 2017.
- [91] S. Shi, Y. Wang, C. Lin, X. Liu, and Y. Rui. Automatically solving number word problems by semantic parsing and reasoning. In *Proceedings of the 2015 Conference on Empirical Methods in Natural Language Processing*, pages 1132–1142, 2015.