

Papers timeline

JR

March 14, 2025

Contents

1	2025	2
2	2024	3
3	2023	4
4	2022	6
5	2021	7
6	2020	8
7	2019	9
8	2018	10
9	2017	11

1 2025

- [1] DeepSeek-AI *et al.*, *DeepSeek-R1: Incentivizing Reasoning Capability in LLMs via Reinforcement Learning*, arXiv:2501.12948 [cs], Jan. 2025. DOI: 10.48550/arXiv.2501.12948. [Online]. Available: <http://arxiv.org/abs/2501.12948> (visited on 03/14/2025).

- [1] Qwen *et al.*, *Qwen2.5 Technical Report*, arXiv:2412.15115 [cs], Jan. 2025. DOI: 10.48550/arXiv.2412.15115. [Online]. Available: <http://arxiv.org/abs/2412.15115> (visited on 03/14/2025).
- [2] N. Muennighoff *et al.*, *OLMoE: Open Mixture-of-Experts Language Models*, arXiv:2409.02060 [cs], Mar. 2025. DOI: 10.48550/arXiv.2409.02060. [Online]. Available: <http://arxiv.org/abs/2409.02060> (visited on 03/14/2025).
- [3] G. Penedo *et al.*, *The FineWeb Datasets: Decanting the Web for the Finest Text Data at Scale*, arXiv:2406.17557 [cs], Oct. 2024. DOI: 10.48550/arXiv.2406.17557. [Online]. Available: <http://arxiv.org/abs/2406.17557> (visited on 03/14/2025).
- [4] A. Grattafiori *et al.*, *The llama 3 herd of models*, 2024. arXiv: 2407.21783 [cs.AI]. [Online]. Available: <https://arxiv.org/abs/2407.21783>.
- [5] A. Gu and T. Dao, *Mamba: Linear-Time Sequence Modeling with Selective State Spaces*, arXiv:2312.00752 [cs], May 2024. DOI: 10.48550/arXiv.2312.00752. [Online]. Available: <http://arxiv.org/abs/2312.00752> (visited on 03/14/2025).
- [6] D. Groeneveld *et al.*, *OLMo: Accelerating the Science of Language Models*, arXiv:2402.00838 [cs], Jun. 2024. DOI: 10.48550/arXiv.2402.00838. [Online]. Available: <http://arxiv.org/abs/2402.00838> (visited on 03/14/2025).
- [7] DeepSeek-AI *et al.*, *DeepSeek-V2: A Strong, Economical, and Efficient Mixture-of-Experts Language Model*, arXiv:2405.04434 [cs], Jun. 2024. DOI: 10.48550/arXiv.2405.04434. [Online]. Available: <http://arxiv.org/abs/2405.04434> (visited on 03/14/2025).

- [1] A. Gu and T. Dao, *Mamba: Linear-Time Sequence Modeling with Selective State Spaces*, arXiv:2312.00752 [cs], May 2024. DOI: 10.48550/arXiv.2312.00752. [Online]. Available: <http://arxiv.org/abs/2312.00752> (visited on 03/14/2025).
- [2] A. Q. Jiang *et al.*, *Mistral 7B*, arXiv:2310.06825 [cs], Oct. 2023. DOI: 10.48550/arXiv.2310.06825. [Online]. Available: <http://arxiv.org/abs/2310.06825> (visited on 03/14/2025).
- [3] H. Touvron *et al.*, *Llama 2: Open Foundation and Fine-Tuned Chat Models*, arXiv:2307.09288 [cs], Jul. 2023. DOI: 10.48550/arXiv.2307.09288. [Online]. Available: <http://arxiv.org/abs/2307.09288> (visited on 03/14/2025).
- [4] Z. Sun *et al.*, *Principle-Driven Self-Alignment of Language Models from Scratch with Minimal Human Supervision*, arXiv:2305.03047 [cs], Dec. 2023. DOI: 10.48550/arXiv.2305.03047. [Online]. Available: <http://arxiv.org/abs/2305.03047> (visited on 03/14/2025).
- [5] R. Anil *et al.*, *PaLM 2 Technical Report*, arXiv:2305.10403 [cs], Sep. 2023. DOI: 10.48550/arXiv.2305.10403. [Online]. Available: <http://arxiv.org/abs/2305.10403> (visited on 03/14/2025).
- [6] B. Peng *et al.*, *RWKV: Reinventing RNNs for the Transformer Era*, arXiv:2305.13048 [cs], Dec. 2023. DOI: 10.48550/arXiv.2305.13048. [Online]. Available: <http://arxiv.org/abs/2305.13048> (visited on 03/14/2025).
- [7] R. Rafailov, A. Sharma, E. Mitchell, S. Ermon, C. D. Manning, and C. Finn, *Direct Preference Optimization: Your Language Model is Secretly a Reward Model*, arXiv:2305.18290 [cs], Jul. 2024. DOI: 10.48550/arXiv.2305.18290. [Online]. Available: <http://arxiv.org/abs/2305.18290> (visited on 03/14/2025).
- [8] S. Yao *et al.*, *Tree of Thoughts: Deliberate Problem Solving with Large Language Models*, arXiv:2305.10601 [cs], Dec. 2023. DOI: 10.48550/arXiv.2305.10601. [Online]. Available: <http://arxiv.org/abs/2305.10601> (visited on 03/14/2025).
- [9] [2304.01373] *Pythia: A Suite for Analyzing Large Language Models Across Training and Scaling*. [Online]. Available: <https://arxiv.org/abs/2304.01373> (visited on 03/14/2025).
- [10] H. Liu, C. Li, Q. Wu, and Y. J. Lee, *Visual Instruction Tuning*, arXiv:2304.08485 [cs], Dec. 2023. DOI: 10.48550/arXiv.2304.08485. [Online]. Available: <http://arxiv.org/abs/2304.08485> (visited on 03/14/2025).
- [11] S. Longpre *et al.*, *The Flan Collection: Designing Data and Methods for Effective Instruction Tuning*, arXiv:2301.13688 [cs], Feb. 2023. DOI: 10.48550/arXiv.2301.13688. [Online]. Available: <http://arxiv.org/abs/2301.13688> (visited on 03/14/2025).
- [12] H. Touvron *et al.*, *Llama: Open and efficient foundation language models*, 2023. arXiv: 2302.13971 [cs.CL]. [Online]. Available: <https://arxiv.org/abs/2302.13971>.
- [13] S. Huang *et al.*, *Language Is Not All You Need: Aligning Perception with Language Models*, arXiv:2302.14045 [cs], Mar. 2023. DOI: 10.48550/arXiv.2302.14045. [Online]. Available: <http://arxiv.org/abs/2302.14045> (visited on 03/14/2025).
- [14] A. Orvieto *et al.*, *Resurrecting recurrent neural networks for long sequences*, 2023. arXiv: 2303.06349 [cs.LG]. [Online]. Available: <https://arxiv.org/abs/2303.06349>.
- [15] *PaLM-E: An Embodied Multimodal Language Model*. [Online]. Available: <https://palm-e.github.io/> (visited on 03/14/2025).
- [16] *GPT-4*, en-US, Jan. 2024. [Online]. Available: <https://openai.com/index/gpt-4-research/> (visited on 03/14/2025).

- [1] S. Iyer *et al.*, *OPT-IML: Scaling Language Model Instruction Meta Learning through the Lens of Generalization*, arXiv:2212.12017 [cs], Jan. 2023. DOI: 10.48550/arXiv.2212.12017. [Online]. Available: <http://arxiv.org/abs/2212.12017> (visited on 03/14/2025).
- [2] P. Liang *et al.*, *Holistic Evaluation of Language Models*, arXiv:2211.09110 [cs], Oct. 2023. DOI: 10.48550/arXiv.2211.09110. [Online]. Available: <http://arxiv.org/abs/2211.09110> (visited on 03/14/2025).
- [3] B. Workshop *et al.*, *BLOOM: A 176B-Parameter Open-Access Multilingual Language Model*, arXiv:2211.05100 [cs], Jun. 2023. DOI: 10.48550/arXiv.2211.05100. [Online]. Available: <http://arxiv.org/abs/2211.05100> (visited on 03/14/2025).
- [4] R. Taylor *et al.*, *Galactica: A Large Language Model for Science*, arXiv:2211.09085 [cs], Nov. 2022. DOI: 10.48550/arXiv.2211.09085. [Online]. Available: <http://arxiv.org/abs/2211.09085> (visited on 03/14/2025).
- [5] H. W. Chung *et al.*, *Scaling Instruction-Finetuned Language Models*, arXiv:2210.11416 [cs], Dec. 2022. DOI: 10.48550/arXiv.2210.11416. [Online]. Available: <http://arxiv.org/abs/2210.11416> (visited on 03/14/2025).
- [6] A. Zeng *et al.*, *GLM-130B: An Open Bilingual Pre-trained Model*, arXiv:2210.02414 [cs], Oct. 2023. DOI: 10.48550/arXiv.2210.02414. [Online]. Available: <http://arxiv.org/abs/2210.02414> (visited on 03/14/2025).
- [7] A. Glaese *et al.*, *Improving alignment of dialogue agents via targeted human judgements*, arXiv:2209.14375 [cs], Sep. 2022. DOI: 10.48550/arXiv.2209.14375. [Online]. Available: <http://arxiv.org/abs/2209.14375> (visited on 03/14/2025).
- [8] J. Wei *et al.*, “Emergent Abilities of Large Language Models,” en,
- [9] Y. Hao *et al.*, *Language models are general-purpose interfaces*, 2022. arXiv: 2206.06336 [cs.CL]. [Online]. Available: <https://arxiv.org/abs/2206.06336>.
- [10] *Google/BIG-bench*, original-date: 2021-01-15T23:28:20Z, Mar. 2025. [Online]. Available: <https://github.com/google/BIG-bench> (visited on 03/14/2025).
- [11] S. Zhang *et al.*, *Opt: Open pre-trained transformer language models*, 2022. arXiv: 2205.01068 [cs.CL]. [Online]. Available: <https://arxiv.org/abs/2205.01068>.
- [12] Y. Tay *et al.*, *Unifying Language Learning Paradigms*, arXiv:2205.05131 [cs] version: 1, May 2022. DOI: 10.48550/arXiv.2205.05131. [Online]. Available: <http://arxiv.org/abs/2205.05131> (visited on 03/14/2025).
- [13] A. Chowdhery *et al.*, *Palm: Scaling language modeling with pathways*, 2022. arXiv: 2204.02311 [cs.CL]. [Online]. Available: <https://arxiv.org/abs/2204.02311>.
- [14] Y. Wu, Z. Sun, S. Li, S. Welleck, and Y. Yang, *Inference Scaling Laws: An Empirical Analysis of Compute-Optimal Inference for Problem-Solving with Language Models*, arXiv:2408.00724 [cs], Mar. 2025. DOI: 10.48550/arXiv.2408.00724. [Online]. Available: <http://arxiv.org/abs/2408.00724> (visited on 03/14/2025).
- [15] L. Ouyang *et al.*, *Training language models to follow instructions with human feedback*, arXiv:2203.02155 [cs], Mar. 2022. DOI: 10.48550/arXiv.2203.02155. [Online]. Available: <http://arxiv.org/abs/2203.02155> (visited on 03/14/2025).
- [16] J. Wei *et al.*, *Chain-of-Thought Prompting Elicits Reasoning in Large Language Models*, arXiv:2201.11903 [cs], Jan. 2023. DOI: 10.48550/arXiv.2201.11903. [Online]. Available: <http://arxiv.org/abs/2201.11903> (visited on 03/14/2025).
- [17] R. Thoppilan *et al.*, *LaMDA: Language Models for Dialog Applications*, arXiv:2201.08239 [cs], Feb. 2022. DOI: 10.48550/arXiv.2201.08239. [Online]. Available: <http://arxiv.org/abs/2201.08239> (visited on 03/14/2025).
- [18] A. Lewkowycz *et al.*, *Solving Quantitative Reasoning Problems with Language Models*, arXiv:2206.14858 [cs], Jul. 2022. DOI: 10.48550/arXiv.2206.14858. [Online]. Available: <http://arxiv.org/abs/2206.14858> (visited on 03/14/2025).
- [19] S. Smith *et al.*, *Using DeepSpeed and Megatron to Train Megatron-Turing NLG 530B, A Large-Scale Generative Language Model*, arXiv:2201.11990 [cs], Feb. 2022. DOI: 10.48550/arXiv.2201.11990. [Online]. Available: <http://arxiv.org/abs/2201.11990> (visited on 03/14/2025).

- [1] N. Du *et al.*, *GLaM: Efficient Scaling of Language Models with Mixture-of-Experts*, arXiv:2112.06905 [cs], Aug. 2022. DOI: 10.48550/arXiv.2112.06905. [Online]. Available: <http://arxiv.org/abs/2112.06905> (visited on 03/14/2025).
- [2] R. Nakano *et al.*, “WebGPT: Browser-assisted question-answering with human feedback,” *ArXiv*, Dec. 2021. [Online]. Available: <https://www.semanticscholar.org/paper/WebGPT%3A-Browser-assisted-question-answering-with-Nakano-Hilton/2f3efe44083af91cef562c1a3451eee2f8601d22> (visited on 03/14/2025).
- [3] S. Borgeaud *et al.*, *Improving language models by retrieving from trillions of tokens*, arXiv:2112.04426 [cs], Feb. 2022. DOI: 10.48550/arXiv.2112.04426. [Online]. Available: <http://arxiv.org/abs/2112.04426> (visited on 03/14/2025).
- [4] J. W. Rae *et al.*, *Scaling Language Models: Methods, Analysis & Insights from Training Gopher*, arXiv:2112.11446 [cs], Jan. 2022. DOI: 10.48550/arXiv.2112.11446. [Online]. Available: <http://arxiv.org/abs/2112.11446> (visited on 03/14/2025).
- [5] V. Sanh *et al.*, *Multitask Prompted Training Enables Zero-Shot Task Generalization*, arXiv:2110.08207 [cs], Mar. 2022. DOI: 10.48550/arXiv.2110.08207. [Online]. Available: <http://arxiv.org/abs/2110.08207> (visited on 03/14/2025).
- [6] J. Wei *et al.*, “Finetuned Language Models are Zero-Shot Learners,” *en*, Oct. 2021. [Online]. Available: <https://openreview.net/forum?id=gEZrGCozdqR> (visited on 03/14/2025).
- [7] M. Chen *et al.*, *Evaluating Large Language Models Trained on Code*, arXiv:2107.03374 [cs], Jul. 2021. DOI: 10.48550/arXiv.2107.03374. [Online]. Available: <http://arxiv.org/abs/2107.03374> (visited on 03/14/2025).
- [8] R. Bommasani *et al.*, *On the Opportunities and Risks of Foundation Models*, arXiv:2108.07258 [cs], Jul. 2022. DOI: 10.48550/arXiv.2108.07258. [Online]. Available: <http://arxiv.org/abs/2108.07258> (visited on 03/14/2025).
- [9] W. Fedus, B. Zoph, and N. Shazeer, *Switch Transformers: Scaling to Trillion Parameter Models with Simple and Efficient Sparsity*, arXiv:2101.03961 [cs], Jun. 2022. DOI: 10.48550/arXiv.2101.03961. [Online]. Available: <http://arxiv.org/abs/2101.03961> (visited on 03/14/2025).

- [1] T. Brown *et al.*, “Language Models are Few-Shot Learners,” in *Advances in Neural Information Processing Systems*, vol. 33, Curran Associates, Inc., 2020, pp. 1877–1901. [Online]. Available: <https://papers.nips.cc/paper/2020/hash/1457c0d6bfcb4967418bfb8ac142f64a-Abstract.html> (visited on 03/14/2025).
- [2] C. Raffel *et al.*, “Exploring the Limits of Transfer Learning with a Unified Text-to-Text Transformer,” *Journal of Machine Learning Research*, vol. 21, no. 140, pp. 1–67, 2020, ISSN: 1533-7928. [Online]. Available: <http://jmlr.org/papers/v21/20-074.html> (visited on 03/14/2025).
- [3] J. Kaplan *et al.*, *Scaling laws for neural language models*, 2020. arXiv: 2001.08361 [cs.LG]. [Online]. Available: <https://arxiv.org/abs/2001.08361>.

- [1] C. Raffel *et al.*, “Exploring the Limits of Transfer Learning with a Unified Text-to-Text Transformer,” *Journal of Machine Learning Research*, vol. 21, no. 140, pp. 1–67, 2020, ISSN: 1533-7928. [Online]. Available: <http://jmlr.org/papers/v21/20-074.html> (visited on 03/14/2025).
- [2] S. Rajbhandari, J. Rasley, O. Ruwase, and Y. He, *ZeRO: Memory Optimizations Toward Training Trillion Parameter Models*, arXiv:1910.02054 [cs], May 2020. DOI: 10.48550/arXiv.1910.02054. [Online]. Available: <http://arxiv.org/abs/1910.02054> (visited on 03/14/2025).
- [3] M. Shoeybi, M. Patwary, R. Puri, P. LeGresley, J. Casper, and B. Catanzaro, *Megatron-LM: Training Multi-Billion Parameter Language Models Using Model Parallelism*, arXiv:1909.08053 [cs], Mar. 2020. DOI: 10.48550/arXiv.1909.08053. [Online]. Available: <http://arxiv.org/abs/1909.08053> (visited on 03/14/2025).
- [4] A. Radford, J. Wu, R. Child, D. Luan, D. Amodei, and I. Sutskever, “Language models are unsupervised multitask learners,” 2019. [Online]. Available: <https://api.semanticscholar.org/CorpusID:160025533>.

8 2018

- [1] J. Bradbury *et al.*, *JAX: Composable transformations of Python+NumPy programs*, version 0.3.13, 2018. [Online]. Available: <http://github.com/jax-ml/jax>.
- [2] J. Devlin, M.-W. Chang, K. Lee, and K. Toutanova, *Bert: Pre-training of deep bidirectional transformers for language understanding*, 2019. arXiv: 1810.04805 [cs.CL]. [Online]. Available: <https://arxiv.org/abs/1810.04805>.
- [3] A. Radford, K. Narasimhan, T. Salimans, and I. Sutskever, “Improving Language Understanding by Generative Pre-Training,” en,

- [1] J. Bradbury *et al.*, *JAX: Composable transformations of Python+NumPy programs*, version 0.3.13, 2018. [Online]. Available: <http://github.com/jax-ml/jax>.

9 2017

- [1] A. Vaswani *et al.*, *Attention is all you need*, 2023. arXiv: 1706.03762 [cs.CL]. [Online]. Available: <https://arxiv.org/abs/1706.03762>.