Yann André LeCun

Chief AI Scientist at Meta, Silver Professor at New York University

Education

- PhD in Computer Science, Université Pierre et Marie Curie (now Sorbonne University), 1987
- Diplôme d'Ingénieur, ESIEE Paris, 1983

Academic Positions

- Silver Professor, Courant Institute of Mathematical Sciences, New York University (2003-present)
- Professor, Center for Neural Science, New York University
- Professor, Tandon School of Engineering, New York University
- Founding Director, NYU Center for Data Science (2012-2014)
- Visiting Professor, Collège de France, Paris (2016)
- Jacob T. Schwartz Chaired Professor in Computer Science, NYU's Courant Institute (2023-present)

Industry Positions

- Vice-President and Chief AI Scientist, Meta (formerly Facebook) (2013-present)
- Head of AI Research, Meta AI Research (2013-present)
- Fellow, NEC Research Institute, Princeton, NJ (brief tenure)
- Department Head, Image Processing Research, AT&T Labs-Research (1996-2002)
- Member of Technical Staff, Adaptive Systems Research Department, AT&T Bell Laboratories (1988-1996)

Research Interests

- Artificial Intelligence
- Machine Learning
- Computer Vision
- Mobile Robotics
- Computational Neuroscience

Key Contributions

- Convolutional Neural Networks (CNNs)
- Backpropagation learning algorithm
- DjVu image compression technology
- Graph Transformer Networks

Selected Awards and Honors

- Turing Award (2018)
- IEEE Neural Network Pioneer Award (2014)
- PAMI Distinguished Researcher Award (2015)
- IRI Medal (2018)
- Harold Pender Award, University of Pennsylvania (2018)
- Golden Plate Award, American Academy of Achievement (2019)
- Princess of Asturias Award for Scientific Research (2022)
- Chevalier (Knight) of the French Legion of Honour (2023)
- Global Swiss AI Award (2024)

Academic Memberships

- Member, US National Academy of Sciences
- Member, US National Academy of Engineering
- Member, French Académie des Sciences

Honorary Doctorates

- Instituto Politécnico Nacional (IPN), Mexico City (2016)
- École Polytechnique Fédérale de Lausanne (EPFL) (2018)
- Université Côte d'Azur (2021)
- Università di Siena (2023)
- Hong Kong University of Science and Technology (2023)

Professional Activities

- Co-founder, International Conference on Learning Representations (ICLR)
- Chair and organizer, "Learning Workshop" (1986-2012)
- Member, Science Advisory Board, Institute for Pure and Applied Mathematics, UCLA

- Co-Director, Learning in Machines and Brain research program, CIFAR
- Scientific advisor, French research group Kyutai

Publications

1. LeCun, Y., Bengio, Y., & Hinton, G. (2015). Deep learning. Nature, 521(7553), 436-444.
2. LeCun, Y., Bottou, L., Bengio, Y., & Haffner, P. (1998). Gradient-based learning applied to document recognition. Proceedings of the IEEE, 86(11), 2278-2324.
3. LeCun, Y., Boser, B., Denker, J. S., Henderson, D., Howard, R. E., Hubbard, W., & Jackel, L. D. (1989). Backpropagation applied to handwritten zip code recognition. Neural computation, 1(4), 541-551.
4. LeCun, Y., & Bengio, Y. (1995). Convolutional networks for images, speech, and time series. The handbook of brain theory and neural networks, 3361(10), 1995.
5. LeCun, Y., & Cortes, C. (1998). The MNIST database of handwritten digits.
6. Sermanet, P., Eigen, D., Zhang, X., Mathieu, M., Fergus, R., & LeCun, Y. (2014). OverFeat: Integrated Recognition, Localization and Detection using Convolutional Networks. International Conference on Learning Representations (ICLR 2014).
7. LeCun, Y., Bottou, L., Orr, G. B., & Müller, K. R. (2002). Efficient backprop. Neural networks: Tricks of the trade, 9-50.
8. Zhang, X., Zhao, J., & LeCun, Y. (2015). Character-level convolutional networks for text classification. Advances in neural information processing systems, 28.
9. LeCun, Y., Boser, B., Denker, J. S., Henderson, D., Howard, R. E., Hubbard, W., & Jackel, L. D. (1990). Handwritten digit recognition with a back-propagation network. Advances in neural information processing systems, 2, NIPS 1989, 396-404.
10. Bruna, J., Zaremba, W., Szlam, A., & LeCun, Y. (2014). Spectral Networks and Locally Connected Networks on Graphs. International Conference on Learning Representations (ICLR 2014).
11. Hadsell, R., Chopra, S., & LeCun, Y. (2006). Dimensionality reduction by learning an invariant mapping. Computer vision and pattern recognition 2006. CVPR 2006. IEEE computer society conference on, 2, 1735-1742.
12. LeCun, Y., Denker, J. S., & Solla, S. A. (1990). Optimal Brain Damage. Advances in neural information processing systems, 2, NIPS 1989, 598-605.
13. Chopra, S., Hadsell, R., & LeCun, Y. (2005). Learning a similarity metric discriminatively, with application to face verification. 2005 IEEE computer society conference on computer vision and pattern recognition, 1, 539-546.
14. Bromley, J., Guyon, I., LeCun, Y., Säckinger, E., & Shah, R. (1993). Signature verification using a "siamese" time delay neural network. Advances in neural information processing systems, 6.
15. LeCun, Y., Cortes, C., & Burges, C. (2010). MNIST handwritten digit database.
16. Bronstein, M. M., Bruna, J., LeCun, Y., Szlam, A., & Vandergheynst, P. (2017). Geometric deep learning: going beyond euclidean data. IEEE Signal Processing Magazine, 34(4), 18-42.
17. Farabet, C., Couprie, C., Najman, L., & LeCun, Y. (2013). Learning Hierarchical Features for Scene Labeling. IEEE Transactions on Pattern Analysis and Machine Intelligence, 8(35), 1915-1929.
18. Tran, D., Wang, H., Torresani, L., Ray, J., LeCun, Y., & Paluri, M. (2017). A Closer Look at Spatiotemporal Convolutions for Action Recognition. Computer vision and pattern recognition conference (CVPR 2018).
19. Wan, L., Zeiler, M., Zhang, S., LeCun, Y., & Fergus, R. (2013). Regularization of neural networks using dropconnect. 30th International Conference on Machine Learning (ICML 2013), 1058-1066.
20. Jarrett, K., Kavukcuoglu, K., Ranzato, M. A., & LeCun, Y. (2009). What is the best multi-stage architecture for object recognition? Computer Vision, 2009. ICCV 2009. IEEE 12th International Conference on, 2146-2153.
21. LeCun, Y., Kavukcuoglu, K., & Farabet, C. (2010). Convolutional networks and applications in vision. Proceedings of 2010 IEEE international symposium on circuits and systems, 253-256.
22. Mathieu, M., Couprie, C., & LeCun, Y. (2015). Deep multi-scale video prediction beyond mean square error. International Conference on Learning Representations (ICLR 2016).
23. Zbontar, J., Jing, L., Misra, I., LeCun, Y., & Deny, S. (2021). Barlow twins: Self-supervised learning via redundancy reduction. International Conference on Machine Learning (ICML), 139, 12310-12320.
24. Gregor, K., & LeCun, Y. (2010). Learning fast approximations of sparse coding. Machine Learning (ICML), 2010, International Conference on, 1-8.
25. Denton, E. L., Zaremba, W., Bruna, J., LeCun, Y., & Fergus, R. (2014). Exploiting linear structure within convolutional networks for efficient evaluation. Advances in neural information processing systems, 27.
26. Henaff, M., Bruna, J., & LeCun, Y. (2015). Deep convolutional networks on graph-structured data. arXiv preprint arXiv:1506.05163.
27. Tompson, J. J., Jain, A., LeCun, Y., & Bregler, C. (2014). Joint training of a convolutional network and a graphical model for human pose estimation. Advances in neural information processing systems, 1799-1807.
28. LeCun, Y., Huang, F. J., & Bottou, L. (2004). Learning methods for generic object recognition with invariance to pose and lighting. Proceedings of the 2004 IEEE Computer Society Conference on Computer Vision and Pattern Recognition, 2, II-97.
29. Boureau, Y. L., Ponce, J., & LeCun, Y. (2010). A theoretical analysis of feature pooling in visual recognition. Machine Learning (ICML), 2010, International Conference on.
30. Ranzato, M. A., Poultney, C., Chopra, S., & LeCun, Y. (2006). Efficient learning of sparse representations with an energy-based model. Advances in neural information processing systems, 19, NIPS 2006, 1137-1144.

[Additional publications omitted due to space constraints]