

# NEURAL NETWORKS FOR MACHINE LEARNING

## A Symposium Honoring **Kunihiko Fukushima** Recipient of the 2021 Bower Award and Prize for Achievement in Science

“For his pioneering research that applied principles of neuroscience to engineering through his invention of the first deep convolutional neural network, “Neocognitron”—a key contribution to the development of artificial intelligence.”



**Wednesday, April 28, 2021**

9:00 AM – 1:00 PM (Eastern Daylight Time)

Free Webinar with Registration

[Registration:](#)

<https://tinyurl.com/BowerFukushima>

See also: [www.fi.edu/awards](http://www.fi.edu/awards)

### SPEAKERS

**KUNIHICO FUKUSHIMA, PH.D., Laureate**

*Fuzzy Logic Systems Institute*

*Former: Osaka University and NHK Science and Technology Research Laboratories*

**BERNARD WIDROW, SC.D.**

*Professor Emeritus, Stanford University*

*2001 Ben Franklin Medal in Engineering*

**JÜRGEN SCHMIDHUBER, PH.D.**

*NNAISENSE and the Swiss AI Lab IDSIA, University of Lugano, Switzerland*

**TOMASO POGGIO, PH.D.**

*Center for Brains, Minds, and Machines*

*Massachusetts Institute of Technology*

**DONALD WUNSCH, PH.D.**

*Applied Computational Intelligence Lab*

*Missouri University of Science and Technology*

**TERRY SEJNOWSKI, PH.D.**

*Computational Neurobiology Laboratory, Salk Institute and*

*Division of Biological Sciences, University of California*

**Speakers' Bio and Abstracts**

<https://tinyurl.com/chjuwjum>

- 9:00 Welcome Remarks
- 9:05 Franklin Institute Awards (Video)
- 9:10 Bower Award Laureate (Video)
- 9:20 Deep CNN Neocognitron and its Advances  
*KUNIHICO FUKUSHIMA*
- 10:00 ADALINE, MADALINE, and Neocognitron  
*BERNARD WIDROW*
- 10:20 Appraisal of Kunihiko Fukushima's Work  
*JÜRGEN SCHMIDHUBER*
- 11:00 A Brave New World: Overfitting is Good When Deep  
*TOMASO POGGIO*
- 11:40 Multidisciplinary Innovation & Fukushima: Lessons Learned  
*DONALD WUNSCH*
- 12:20 The Unreasonable Effectiveness of Deep Learning in AI  
*TERRY SEJNOWSKI*