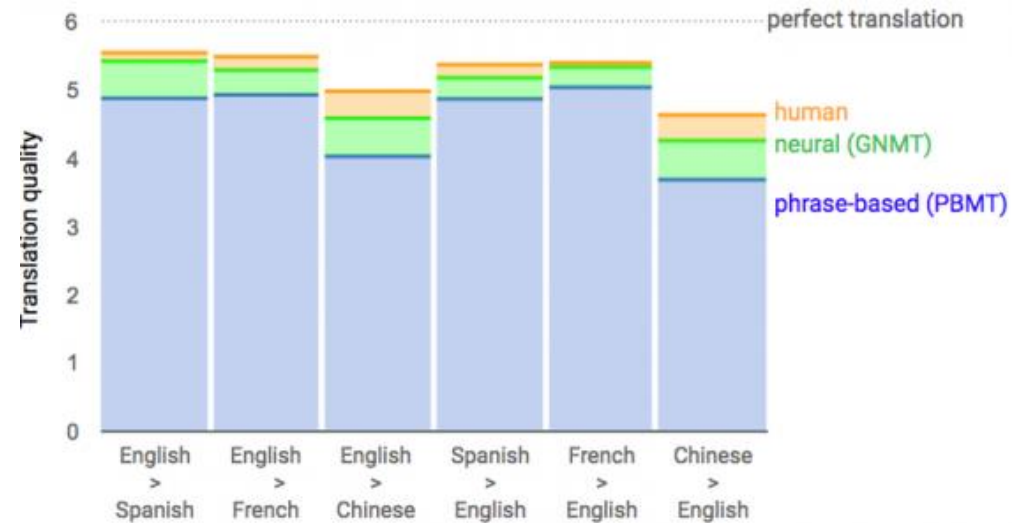
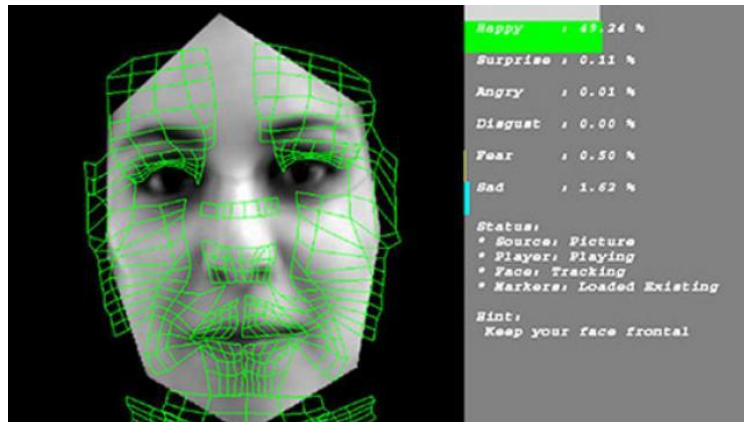
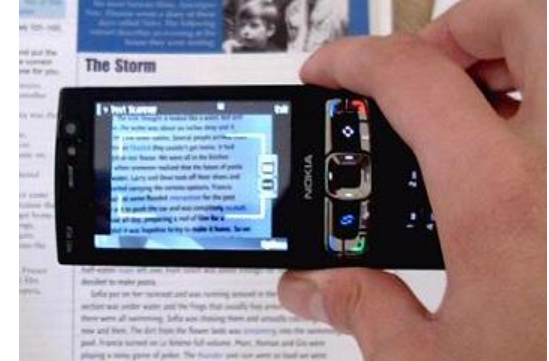


REDES NEURONAIS ARTIFICIAIS

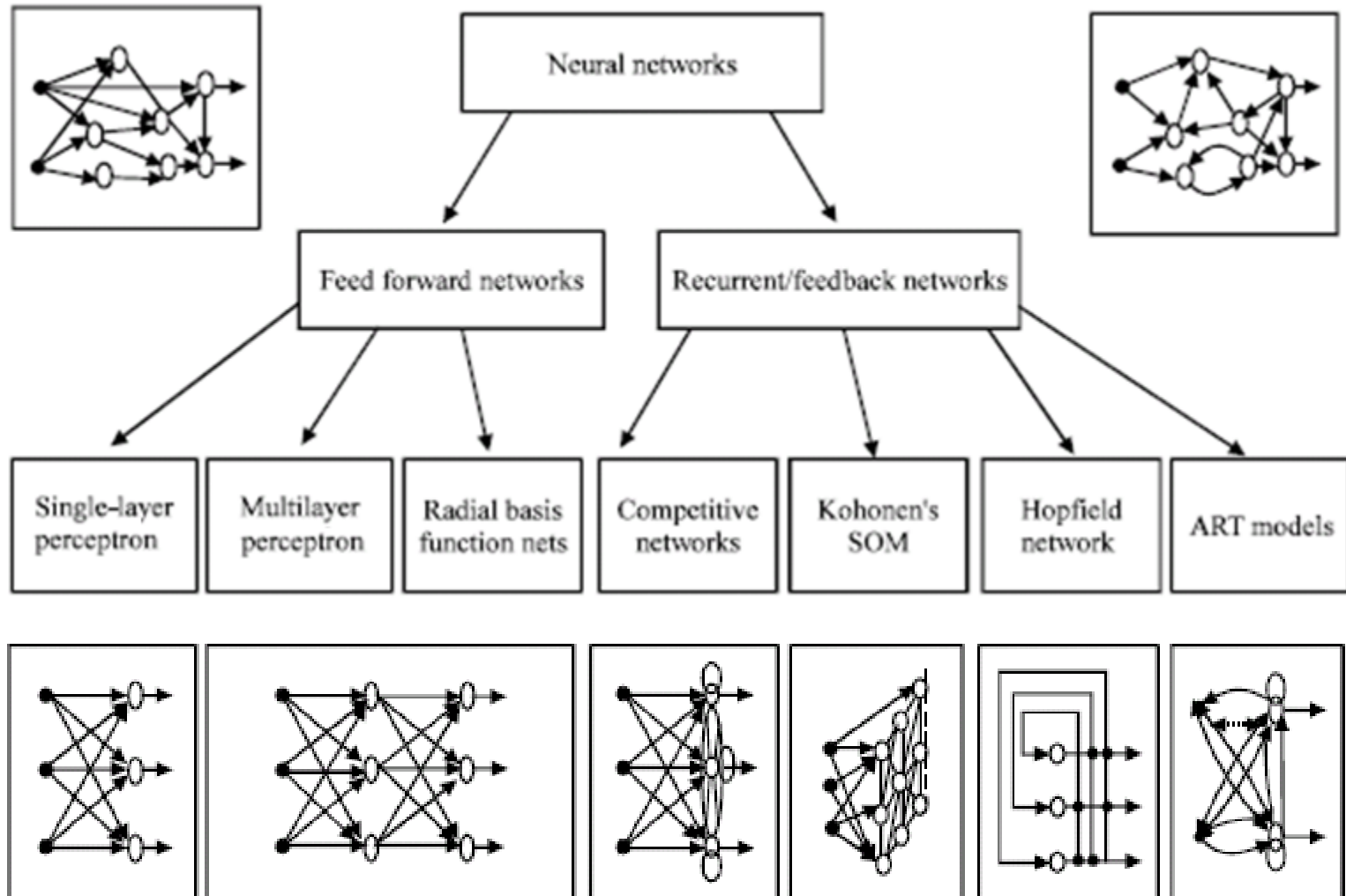
Luís Morgado

ISEL-ADEETC

APLICAÇÃO DE REDES NEURONAIS

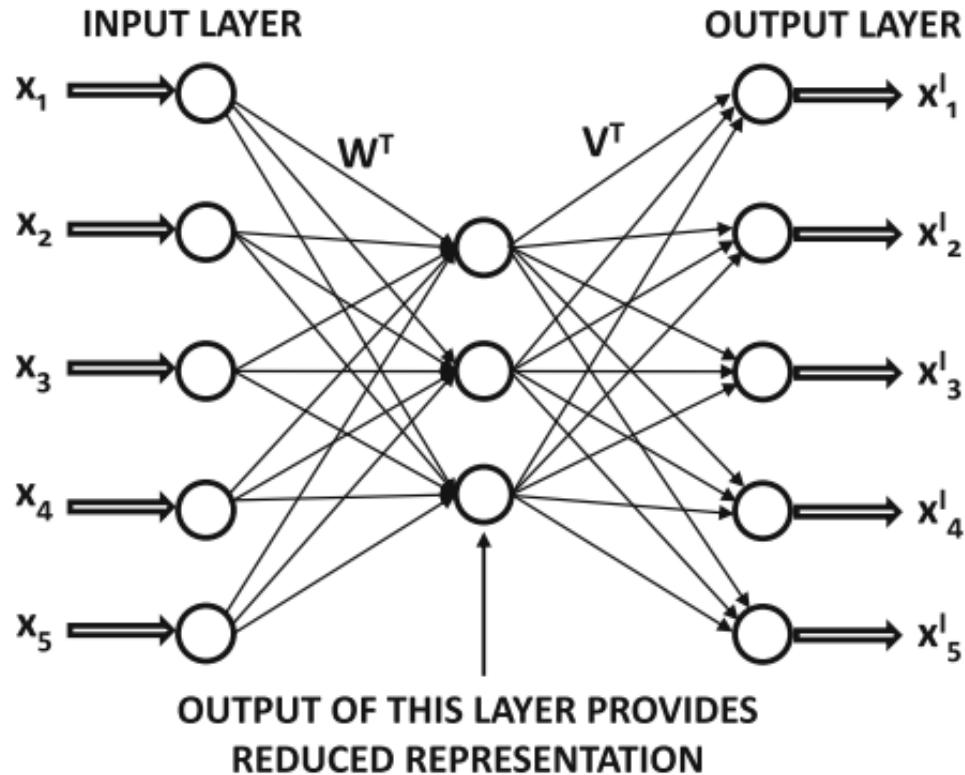


ARQUITECTURAS DE REDES NEURONAIS



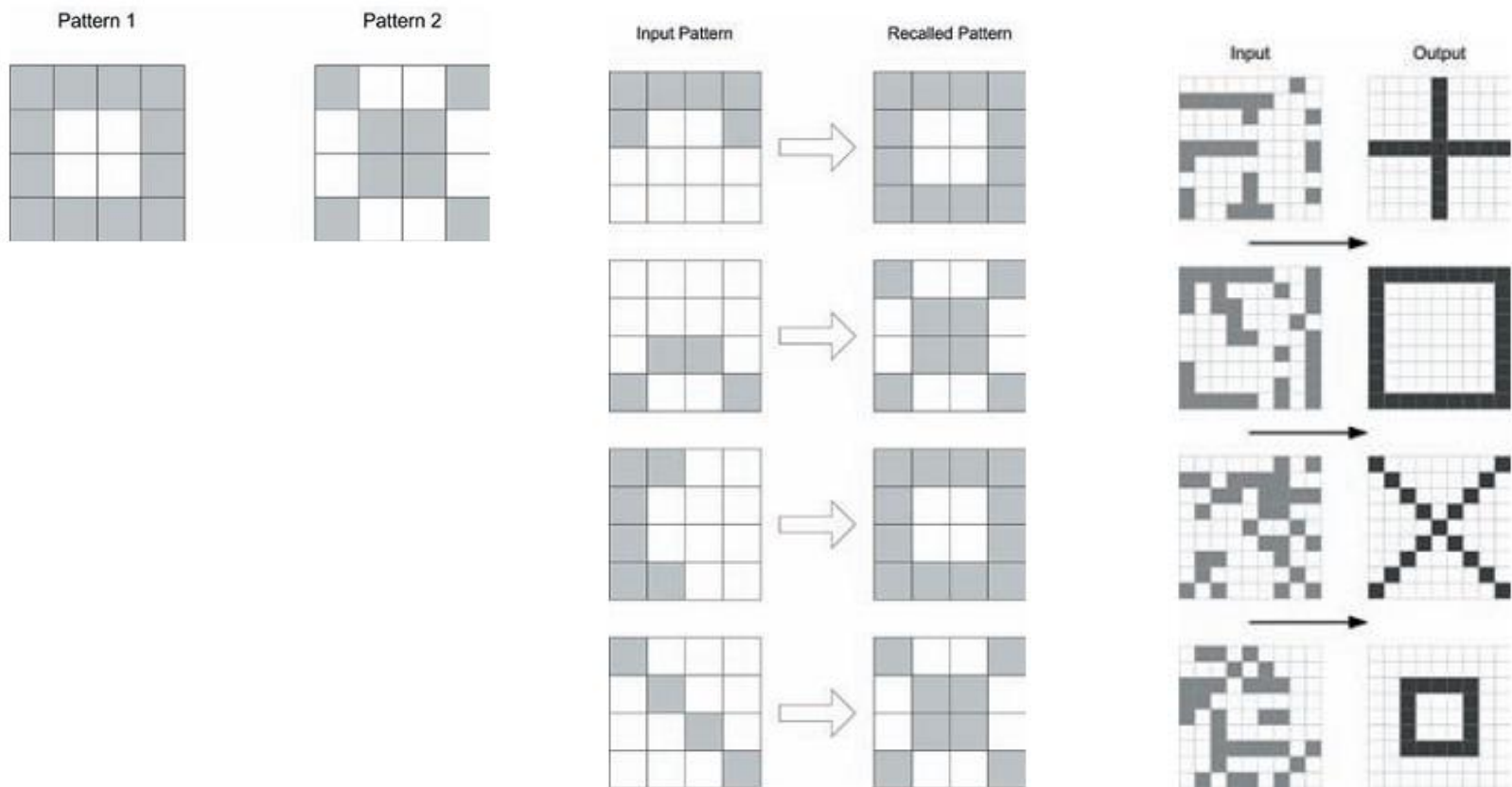
REDES NEURONAIS AUTO-CODIFICADORAS

Auto-encoder Networks

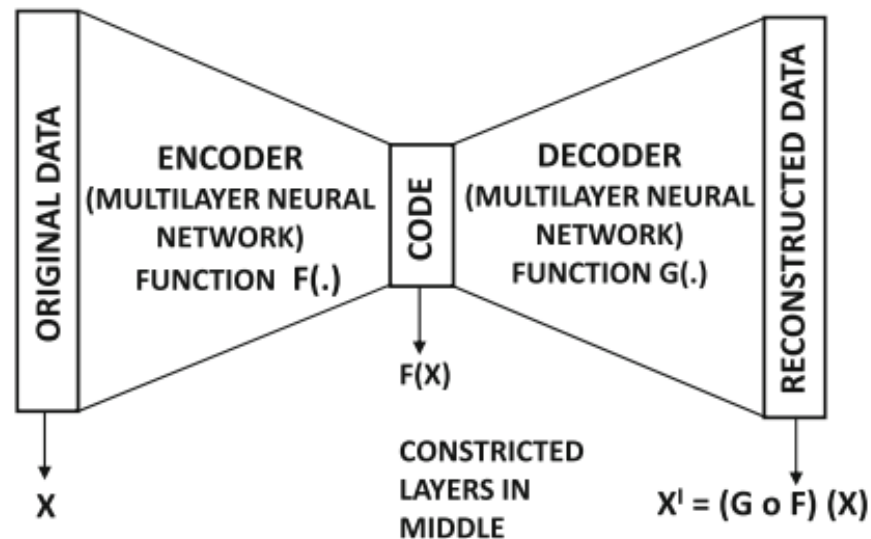
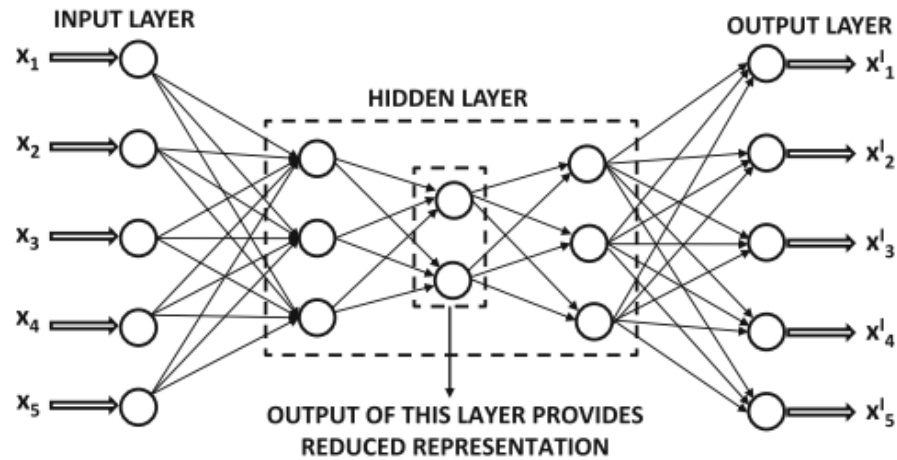


REDES NEURONAIS AUTO-CODIFICADORAS

MEMÓRIA ASSOCIATIVA

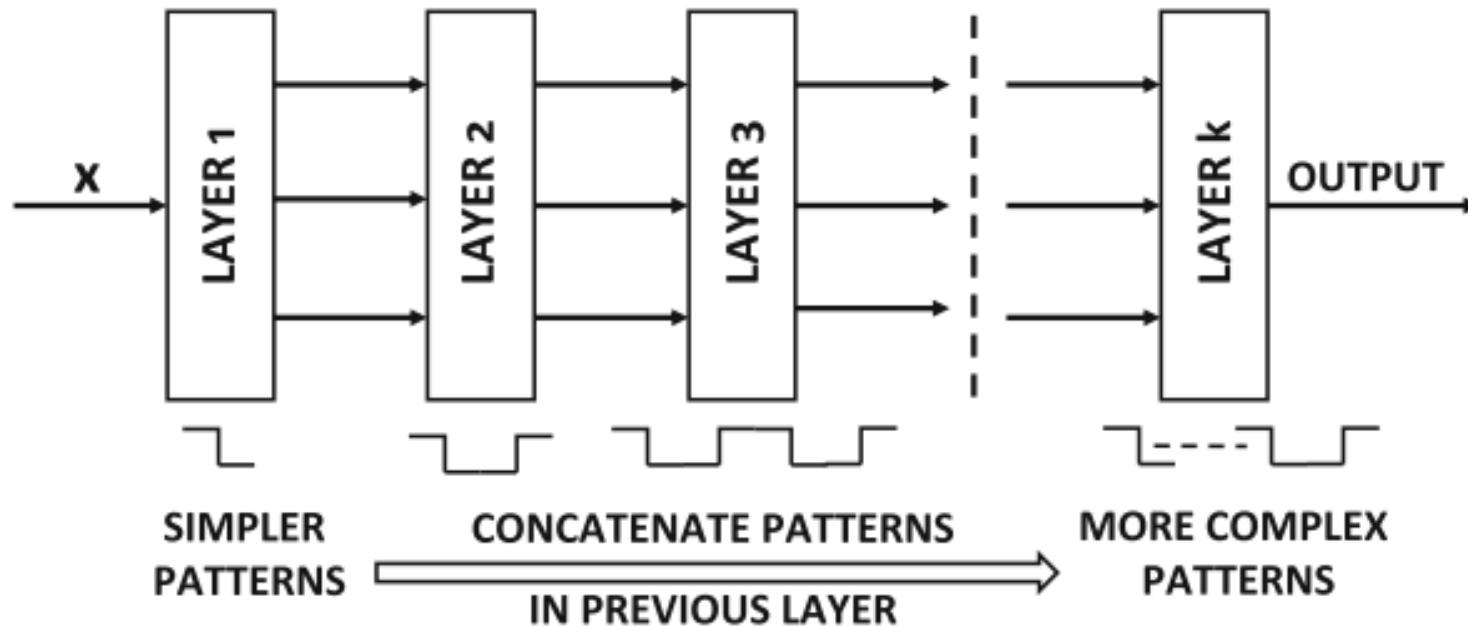


REDES NEURONAIS AUTO-CODIFICADORAS



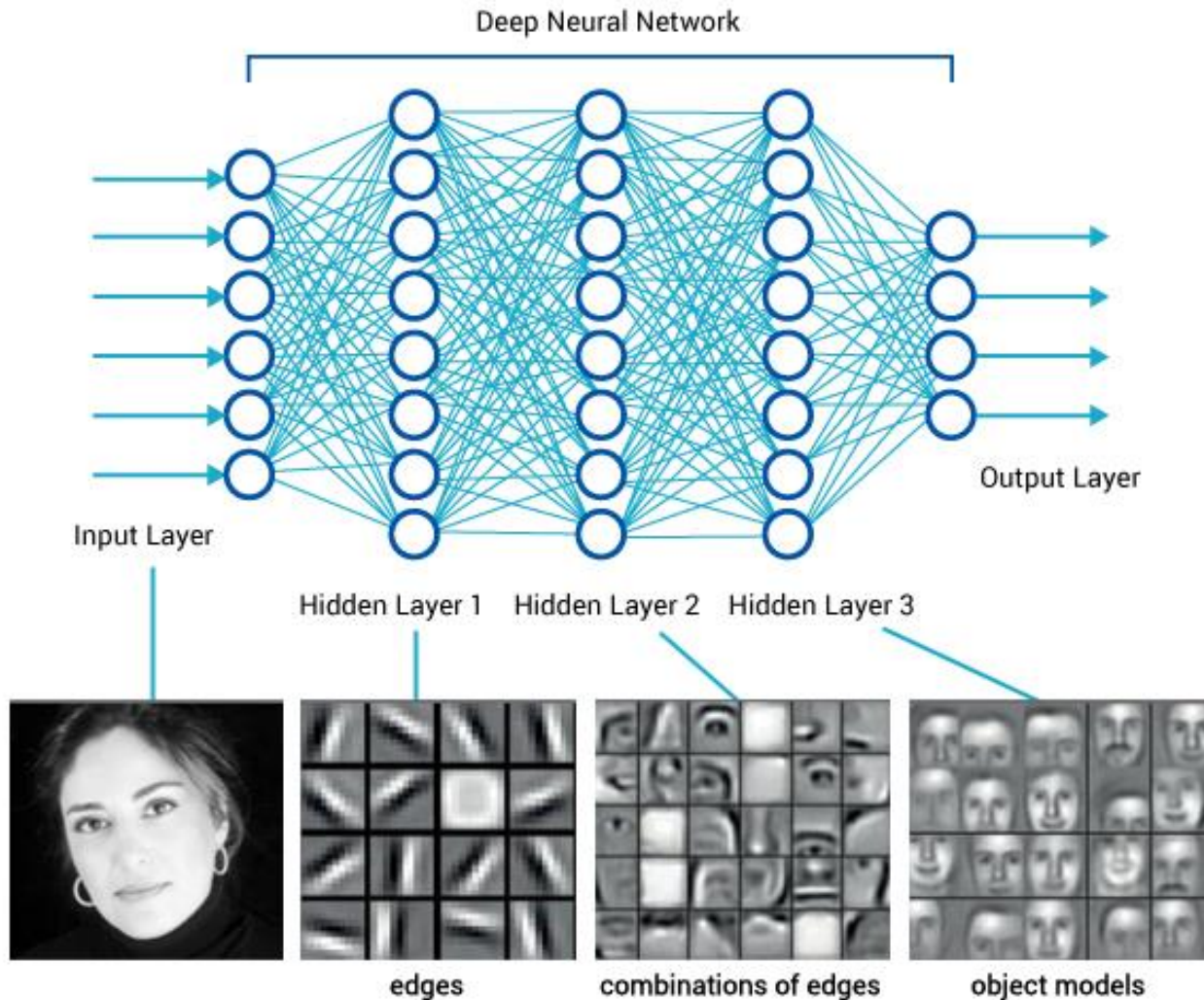
REDES NEURONAIS MULTI-NÍVEL

DEEP NEURAL NETWORKS



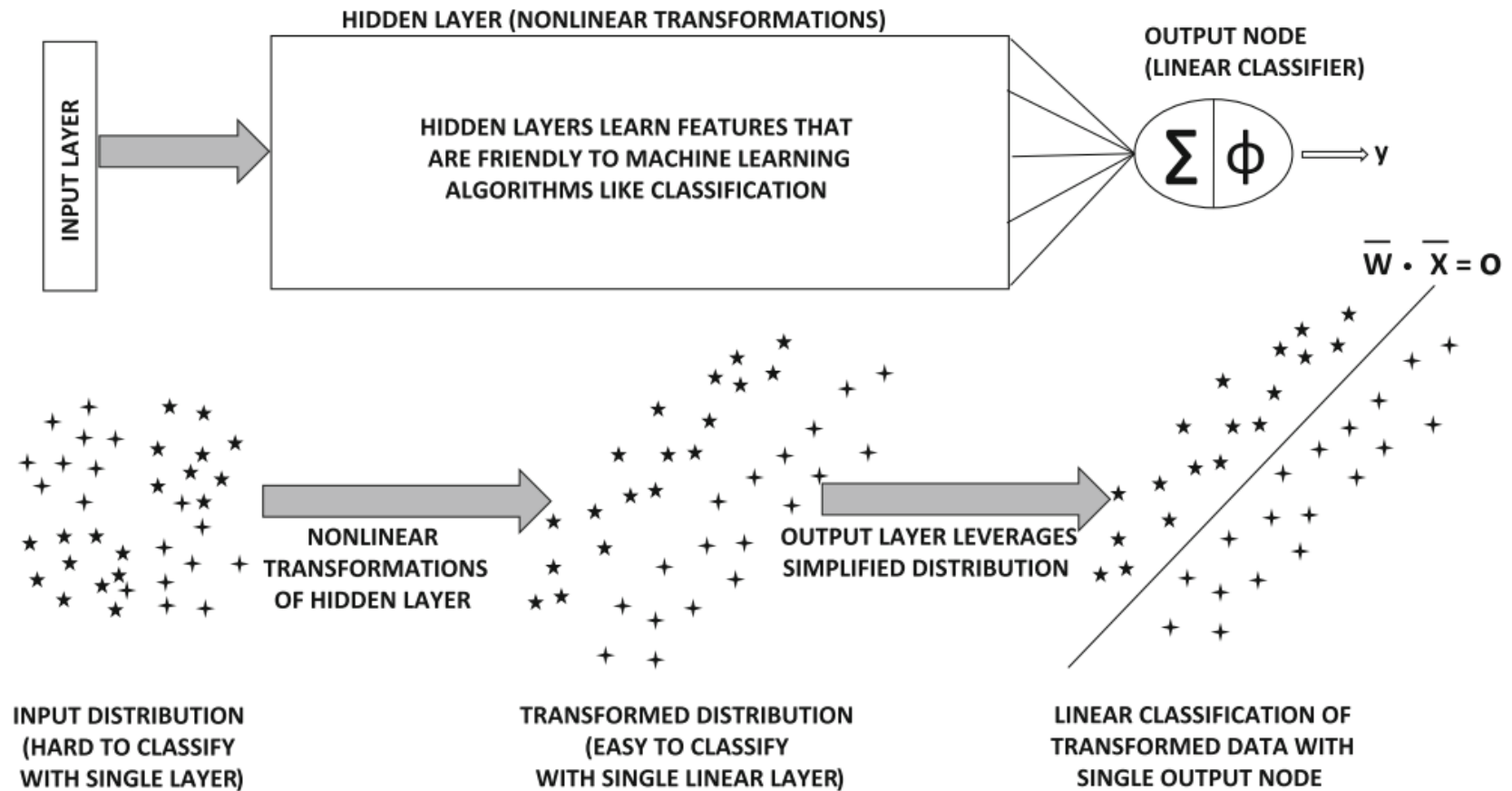
REDES NEURONAIS MULTI-NÍVEL

DEEP NEURAL NETWORKS



REDES NEURONAIS MULTI-NÍVEL

DEEP NEURAL NETWORKS



REDES NEURONAIS ARTIFICIAIS

- Inspiradas nas redes neuronais biológicas
- Sistemas computacionais **massivamente paralelos**, consistindo num número elevado de elementos de processamento (designados neurónios) interligados entre si de formas diversas
- **Características:**
 - Capacidade de aprendizagem
 - Capacidade de generalização
 - Adaptabilidade
 - Computação e representação distribuída
 - Paralelismo massivo
 - Robustez

BIBLIOGRAFIA

[Aggarwal, 2018]

C. Aggarwal, *Neural Networks and Deep Learning*
Springer, 2018

[Munakata, 1998]

T. Munakata, *Fundamentals of the New Artificial Intelligence*, Springer, 1998

[Winston, 1992]

P. Winston, *Artificial Intelligence*, 3rd Edition, Addison-Wesley, 1992

[Raizer *et al.*, 2009]

K. Raizer, H. Idagawa, E. Nobrega, L. Ferreira, *Training and Applying a Feedforward Multilayer Neural Network in GPU*, CILAMCE, 2009

[R. Gutierrez-Osuna, 2005]

R. Gutierrez-Osuna, *Introduction to Pattern Analysis*, Texas A&M University, 2005