



Workforce Development in the AI/AS Space ***An Enterprise Perspective***

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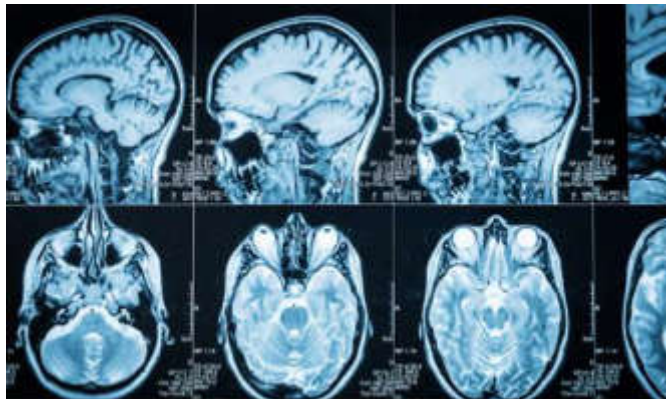
The University of Maine AI Series

IEEE★USA

IEEE At A Glance

- **More than 423,000 members in more than 160 countries**
- **334 Sections in ten geographic Regions worldwide**
- **2,116 Chapters that unite local members with similar technical interests**
- **486 affinity groups;**
 - Consultants' Network, Young Professionals (YP), Women in Engineering (WIE), Life Members (LM), and IEEE Entrepreneurship
- **39 Societies and seven technical councils**
- **More than 4 million documents in the IEEE Xplore® Digital Library**
 - more than 8 million downloads each month
- **1,300 active standards and more than 500 standards under development**
- **Publishes approximately 200 transactions, journals, and magazines**
- **Sponsors more than 1,800 conferences in 95 countries while:**
- **Partnering with more than 1,300 non-IEEE entities globally**
- **Attracting more than 485,000 conference attendees**
- **Publishing more than 1,500 conference proceedings via IEEE Xplore**

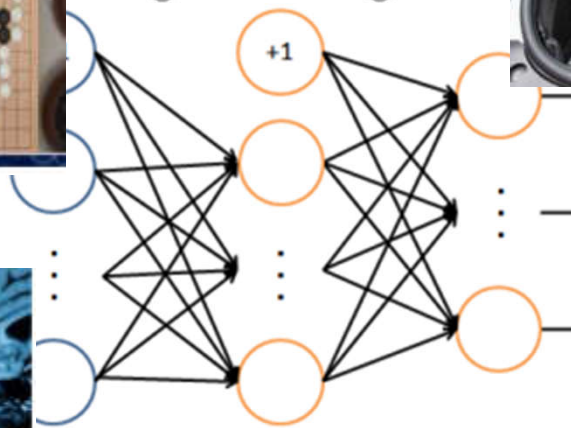
AI/AS Careers: Two paths emerging.....



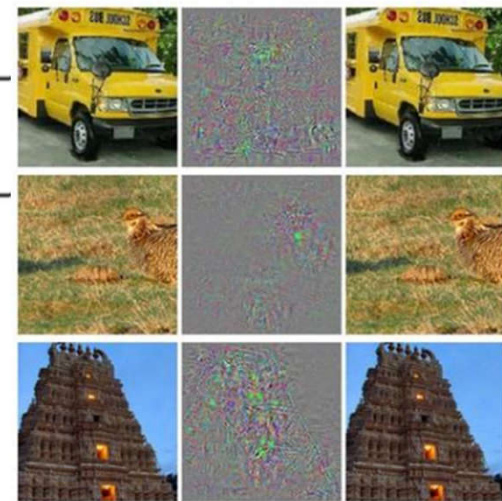
R & D →



$\Theta^{(1)}$ $\Theta^{(2)}$



← APPLICATIONS



MIT Deep Learning Series

correct +distort ostrich

A New Education Model:

Self driving vehicle nanodegree

- Introduction to self driving cars
- Computer vision
 - Finding lanes on the road
 - Advanced lane finding
- Deep learning (NVIDIA)
 - Traffic sign classifier
 - Behavioral cloning
- Sensor fusion
 - Extended Kalman filters
- Localization
 - Kidnapped vehicle
- Planning
 - Highway driving
- System integration
 - Programming a self driving vehicle



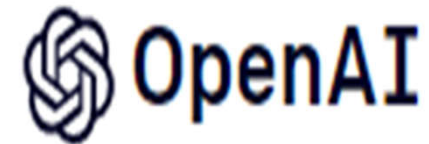
Sebastian Thrun - Wikipedia

Grow with **Google**

IEEE eLearning Library

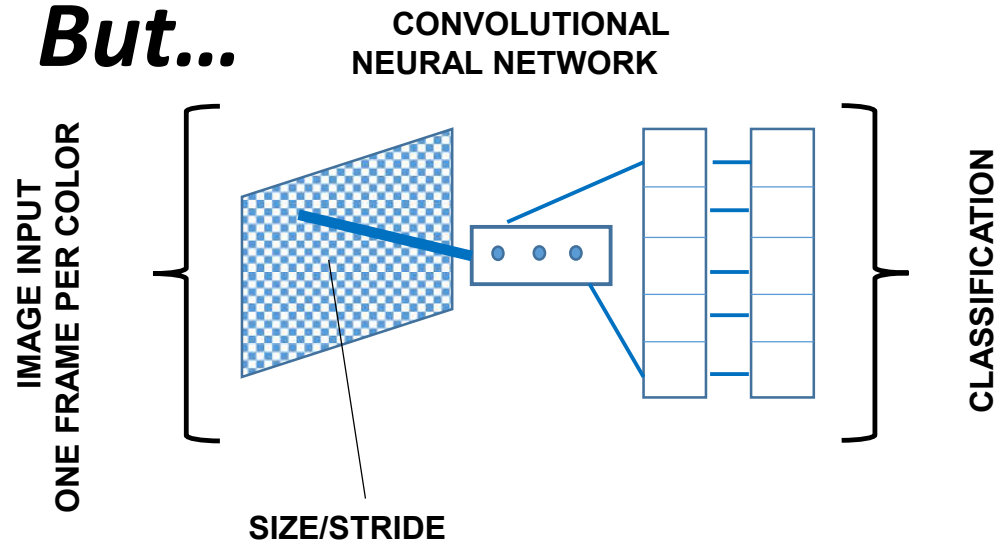
Application Education Resources Everywhere

Some pricey, some inexpensive, some free



R & D Education Resources Everywhere

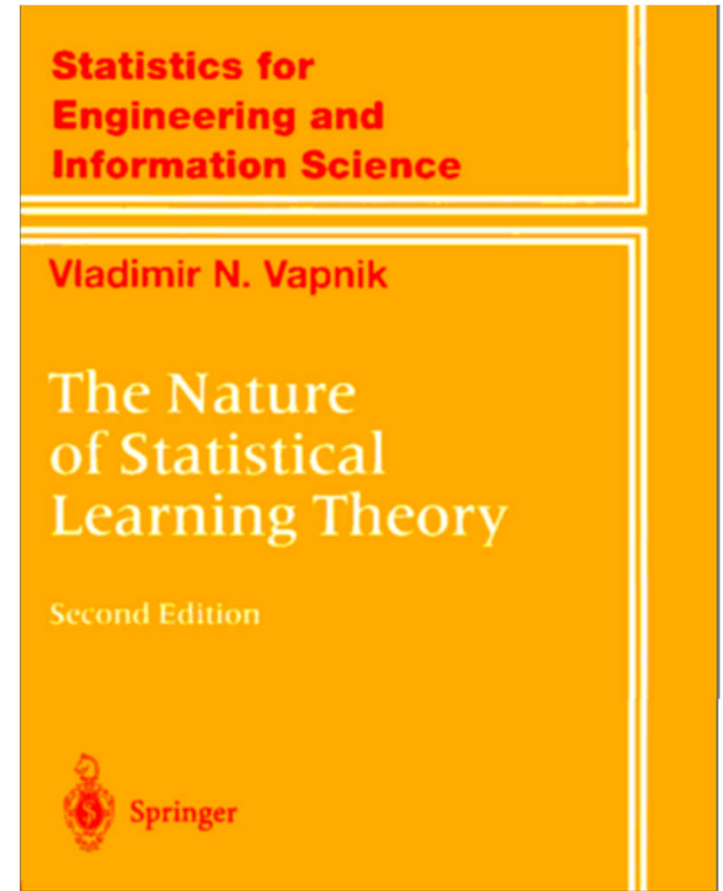
But...



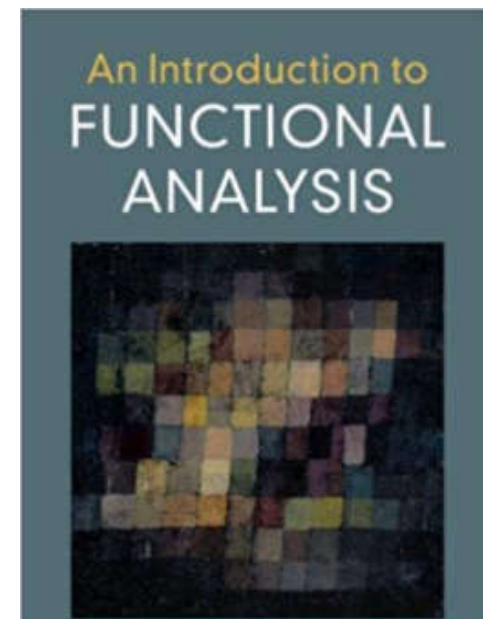
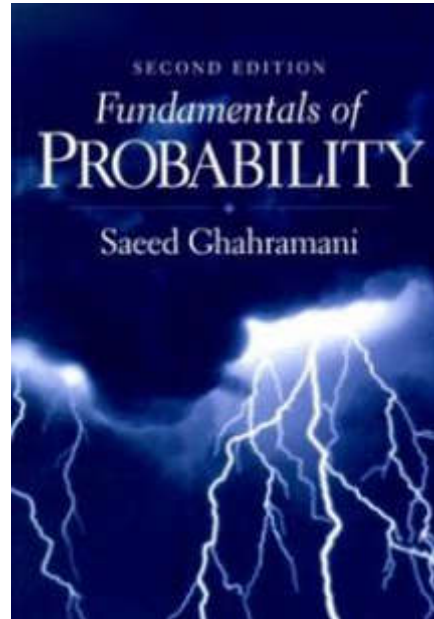
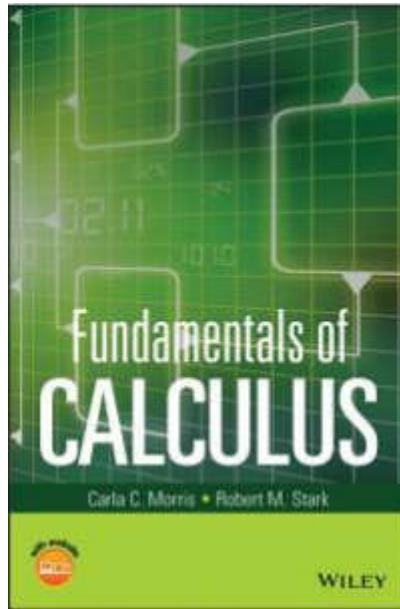
$$f(t) * g(t) = \int_{-\infty}^{+\infty} f(t - \lambda)g(\lambda)d\lambda$$

$$K_{gaussian}(x^{(i)}, x^{(j)}) = \exp\left(-\frac{\|x^{(i)} - x^{(j)}\|^2}{2\sigma^2}\right)$$

$$\text{posterior} = \frac{\text{prior} \times \text{likelihood}}{\text{evidence}}$$



A strong foundation is absolutely crucial



***Calculus, Differential Equations, Linear Algebra,
Numerical Methods, Probability & Statistics***

Thank you and be safe!!

Many thanks, again, to the University of Maine, IEEE USA, and Dr. Ali Abedi for inviting me to participate in today's event



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