

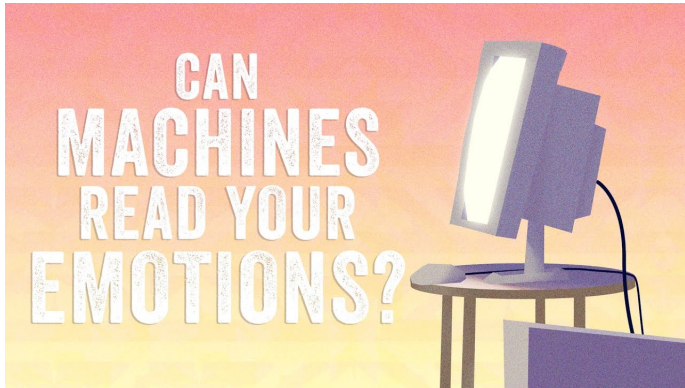
Soft Computing

Ali Akbar Septiandri

Universitas Al Azhar Indonesia

September 23, 2018

Soft Computing Practical Deep Learning

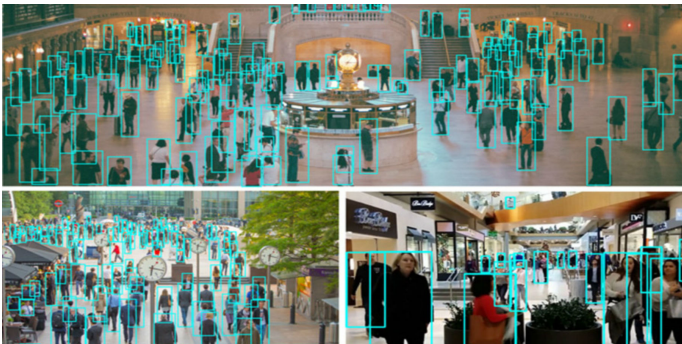


Gambar: <https://www.youtube.com/watch?v=QFk3e5PcK7s>

Face++ = new face recognition ();



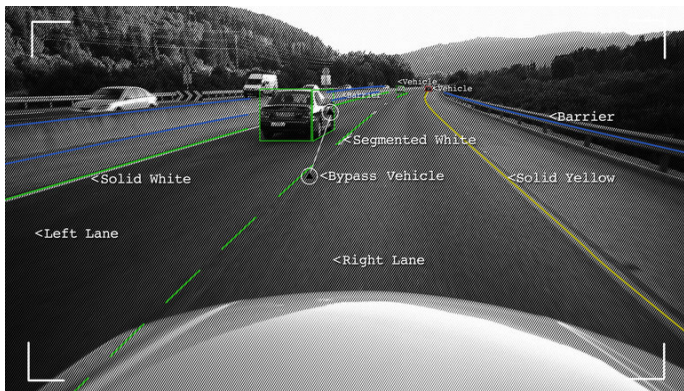
Gambar: Face recognition



Gambar: Crowd detection

https:

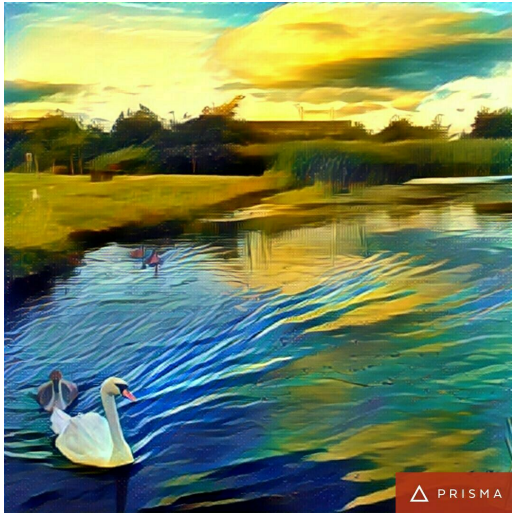
[//www.coherentnews.com/crowd-analytics-market-outlook-insights-and-revenue-opportunities-till-2025/](https://www.coherentnews.com/crowd-analytics-market-outlook-insights-and-revenue-opportunities-till-2025/)



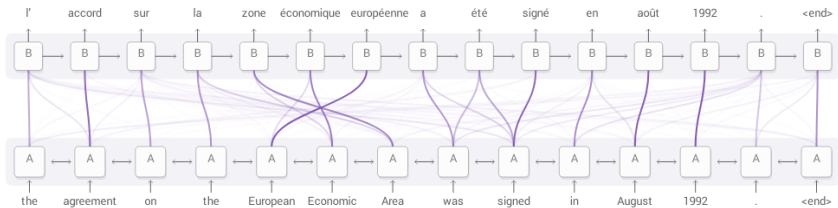
Gambar: Self-driving cars

<http://www.nytimes.com/2016/11/29/business/>

[intel-to-team-with-delphi-and-mobileye-for-self-driving-cars.html](http://www.nytimes.com/2016/11/29/business/intel-to-team-with-delphi-and-mobileye-for-self-driving-cars.html)

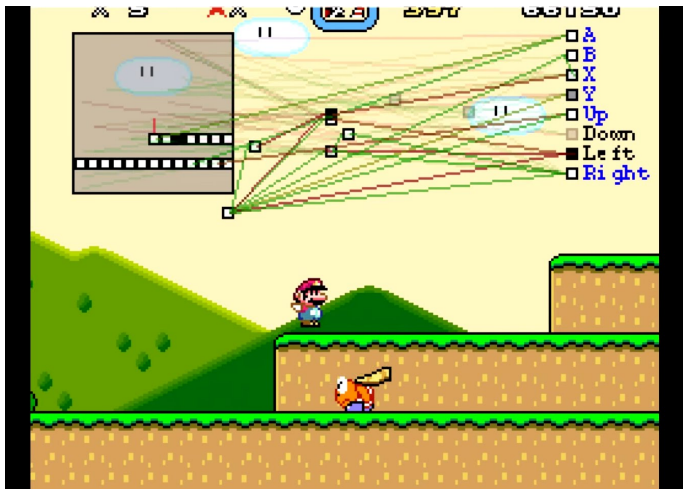


Gambar: Menghasilkan "karya seni"

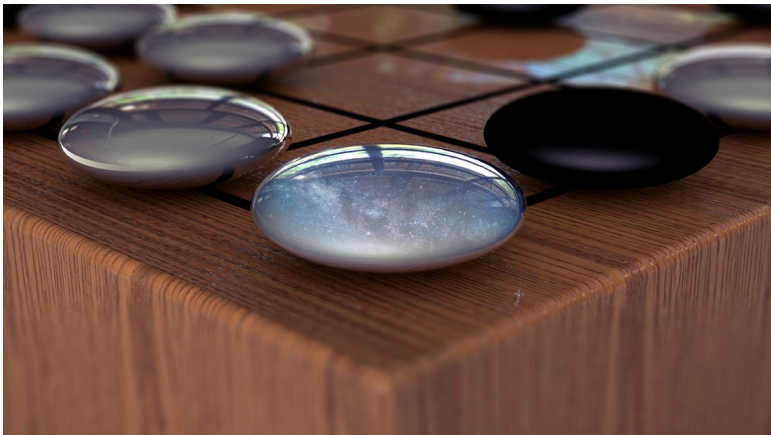


Gambar: Machine translation

<https://distill.pub/2016/augmented-rnns/>



Gambar: Marl/O — Sumber: Seth Bling (YouTube)



Gambar: AlphaGo, AlphaGo Zero, AlphaZero

Topik dalam kuliah ini

- Pengenalan deep learning
- Dasar neural networks
- Matematika dalam deep learning
- Klasifikasi gambar dengan *convolutional neural networks*
- Kategorisasi teks dengan *recurrent neural networks*
- Generative Adversarial Networks (GANs)
- Collaborative filtering

Referensi



[Gambar:](#) Practical Deep Learning for Coders, Part 1

Referensi



CS230: Deep Learning Spring 2018 Instructors



Andrew Ng Kian Katanforoosh

Gambar: Stanford CS230: Deep Learning

Mata kuliah terkait

- Algoritma Pemrograman
- Struktur Data
- Matematika Diskrit
- Kecerdasan Buatan

Aturan perkuliahan

- Materi bisa dilihat di <http://uai.aliakbars.com/soft-computing/>
- Kuliah setiap hari Senin, 15.30-18.00 (**toleransi 30 menit**)
- Teknologi: Python, Keras/TensorFlow
- Terdapat **4 tugas** membuat program
- **Kuis**
- Ujian Tengah Semester (**tidak ada perbaikan**)
- **Proyek akhir** pengganti UAS
- **Komponen nilai**: 40% tugas, 30% UTS, 30% proyek akhir

Mengapa Keras?



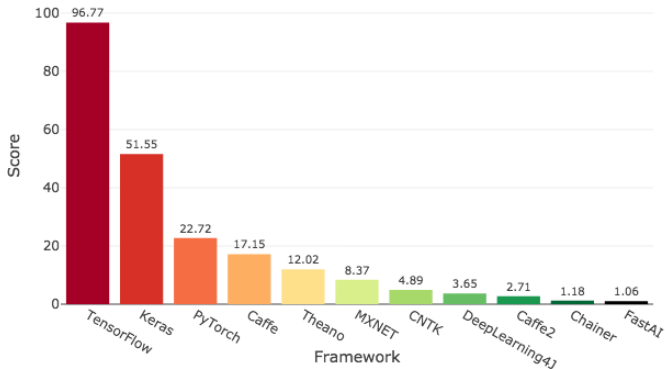


Gambar: Salah satu framework paling populer yang dikembangkan Google

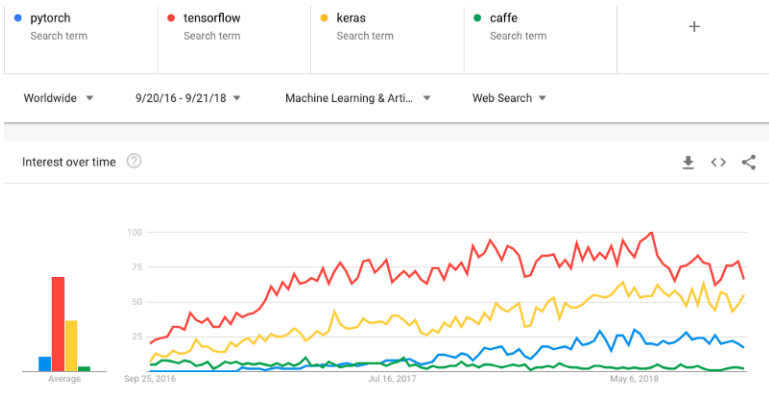


Gambar: Framework deep learning dari Facebook

Deep Learning Framework Power Scores 2018



Gambar: Framework apa yang paling populer? [Hale, 2018]



Gambar: Google Trends dari lime frameworks populer [Hale, 2018]

Aturan dalam tugas

- Secara *default*, setiap tugas bersifat **individual**
- Silakan berdiskusi, tapi **jangan menyalin kode atau tulisan teman**
- **Keterlambatan pengumpulan** akan berakibat pada pengurangan nilai
- Pengumpulan tugas dilakukan melalui situs **e-learning**

Aturan dalam tugas (lanjutan)

- Kode **boleh diadaptasi dari internet**, tapi selalu **cantumkan sumbernya** dengan benar
- Contoh:
 - Sumber: `google.com`, `stackoverflow.com` (**salah**)
 - Sumber: `https://github.com/keras-team/keras/blob/master/examples/mnist_mlp.py` (**benar**)
- Plagiarisme dapat berakibat pada **nilai nol** untuk tugas tersebut

Mulailah pengerjaan tugas
segera setelah diberikan!

Referensi

1. Nielsen, M. (2017). **Neural Networks and Deep Learning**. URL: <http://neuralnetworksanddeeplearning.com/>
2. Goodfellow, I., Bengio, Y., & Courville, A. (2016). **Deep Learning**. MIT Press. URL: <https://www.deeplearningbook.org/>

LeCun, Y., Bengio, Y., & Hinton, G. (2015).
Deep learning. *Nature*, 521(7553), 436.

Buatlah ringkasannya!

Kemampuan menulis kode sangat penting!

Pertemuan berikutnya

- Pengenalan deep learning
- Regresi linear
- Regresi logistik
- Gradient descent

Referensi



Jeff Hale (20 September 2018)

Deep Learning Framework Power Scores 2018

[https://towardsdatascience.com/
deep-learning-framework-power-scores-2018-23607ddf297a](https://towardsdatascience.com/deep-learning-framework-power-scores-2018-23607ddf297a)

Terima kasih