

Redes Neurais e Aprendizagem Profunda

INTRODUÇÃO

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Aprendizagem Profunda: Modismo ou Esperança?

RCH

The New York Times



Godzillium vs. Trumpium:
Some Suggestions to Add
to the Periodic Table



To Protect Against Zika
Virus, Pregnant Women
Are Warned About Latin
American Trips



THE NEW OLD A
F.T.C.'s Lum
Doesn't End
Training Del

SCIENCE

Scientists See Promise in Deep-Learning Progr

By JOHN MARKOFF NOV. 23, 2012

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Forbes / Tech

DEC 29, 2014 @ 11:37 AM 89,471 VIEWS

Tech 2015: Deep Learning And Machine Intelligence Will Eat The World

'Deep learning' technology inspired by human brain

culture business lifestyle fashion environment tech travel

nature

International weekly journal of science

Home | News & Comment | Research | Careers & Jobs | Current Issue |

Archive > Volume 518 > Issue 7540 > News > Article

NATURE | NEWS

عربى

Game-playing software holds lessons for neuroscience

Did Facebook Shutdown An AI That Made Its Own Language? AI Will Never Replace Humans and Artificial Intelligence's Threat may Already Be Here

Google a step closer to developing machines with human-like intell

Algorithms developed by Google designed to encode thoughts, concepts and emotions

Marcos: Reconhecimento de Dígitos

LeNet 1989 (Lecun et al.): reconhecimento de códigos postais utilizada pelo serviço postal dos USA

80322-4129 80206

40004 44310

37878 05753

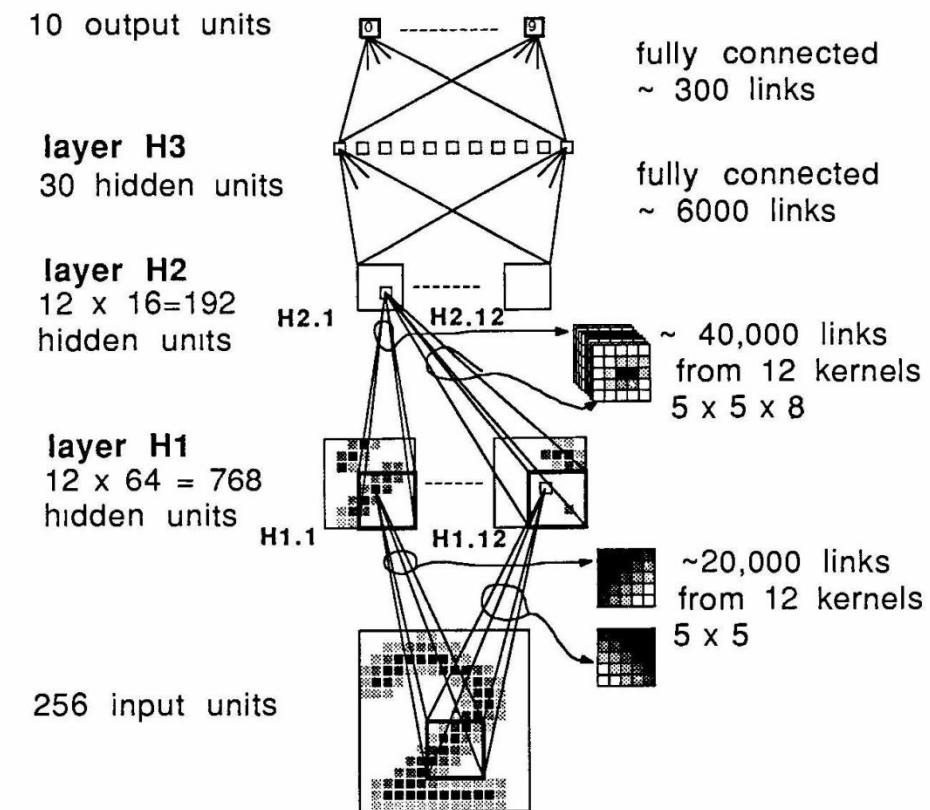
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Marcos: Reconhecimento de Dígitos

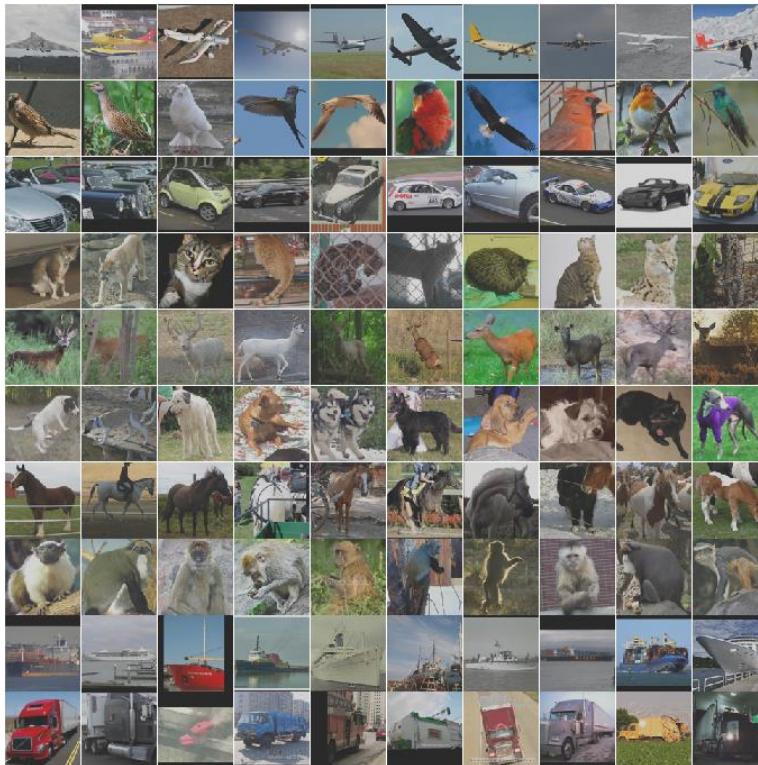
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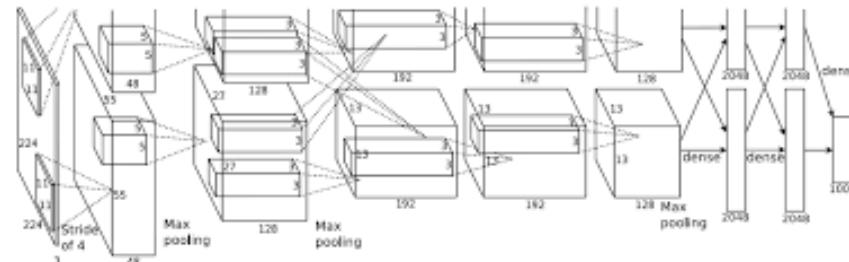


Marcos: Classificação de Imagens

Redes Neurais Convolucionais: AlexNet (2012) treinada com 200 GB de dados da ImageNet

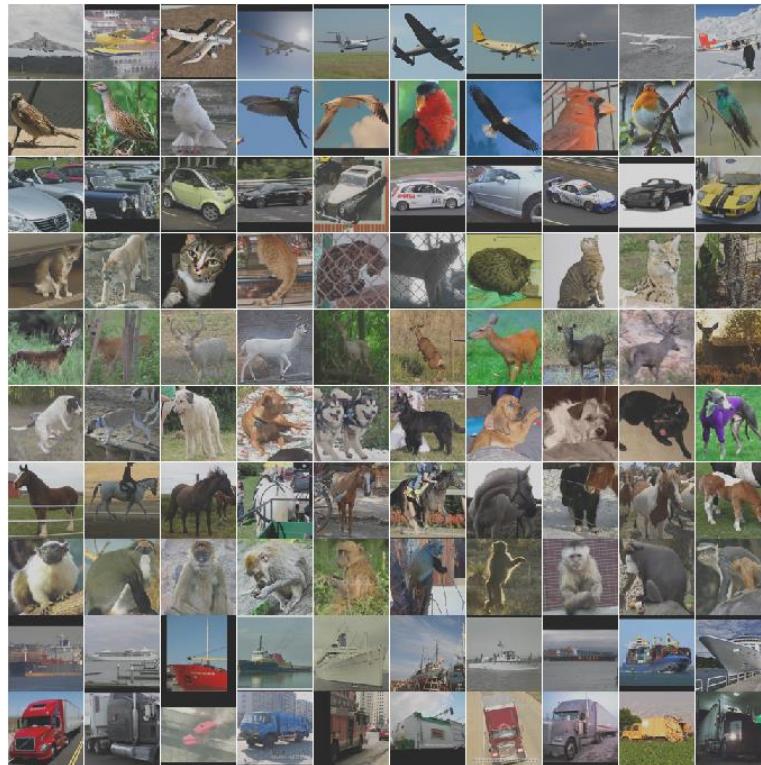


AlexNet

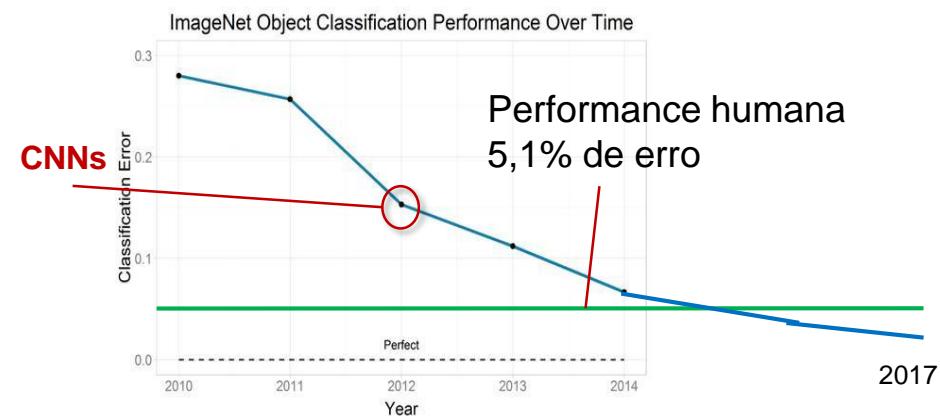
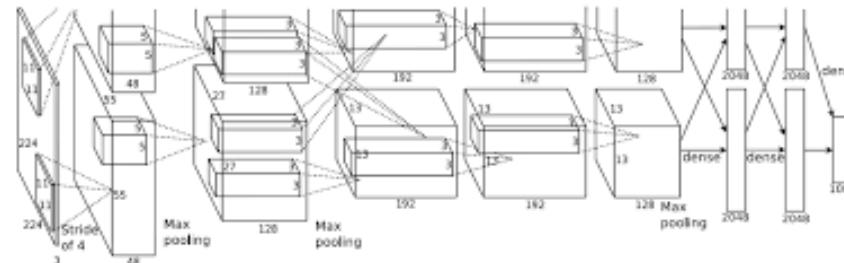


Marcos: Classificação de Imagens

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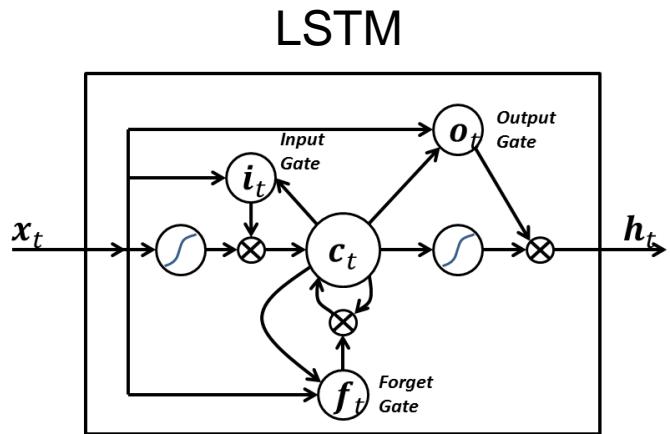


AlexNet



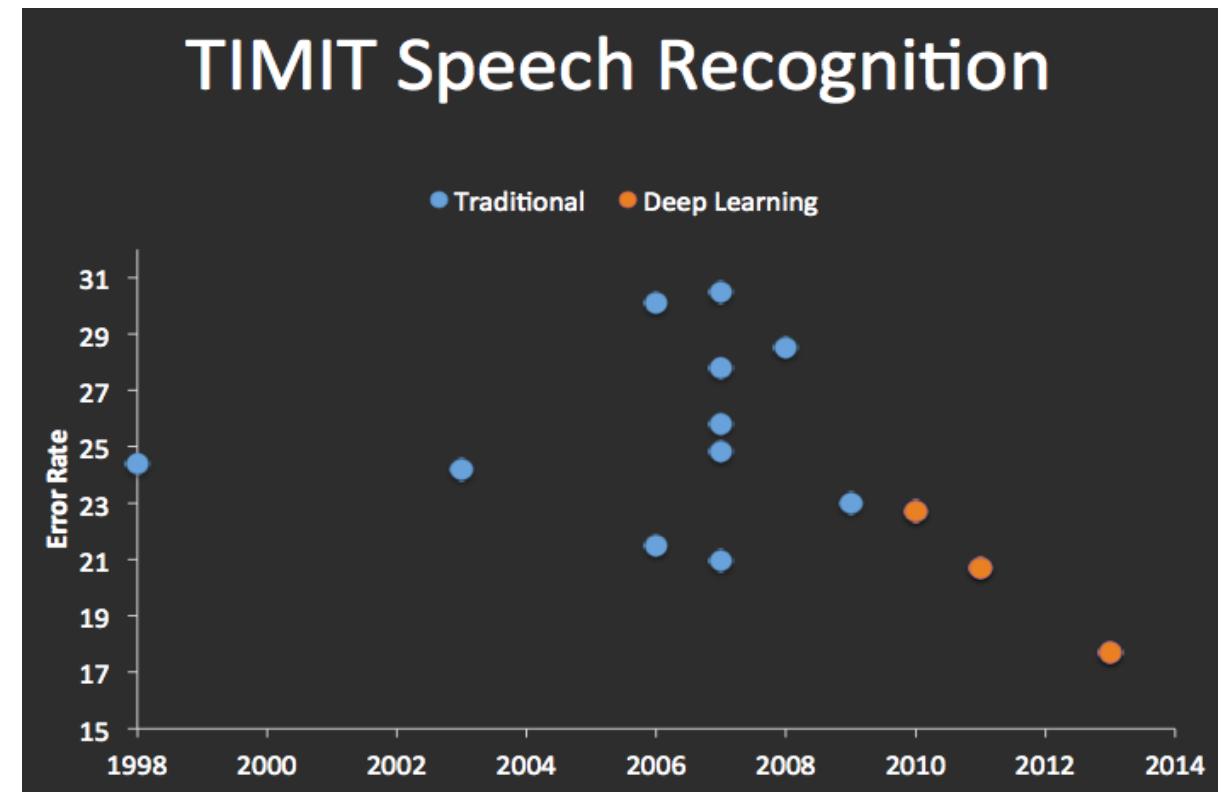
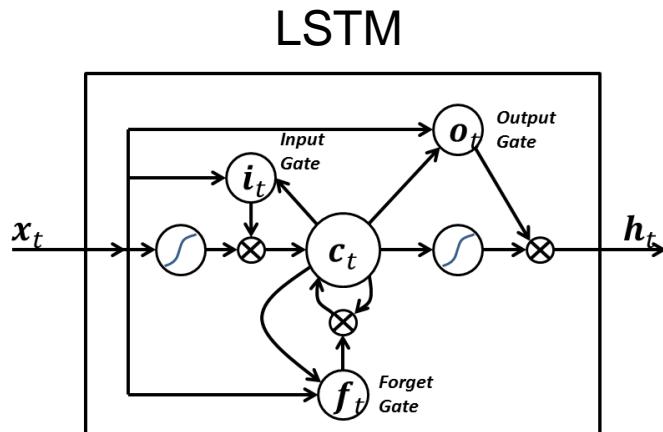
Marco: Reconhecimento de Fala

Redes Neurais Recorrentes: LSTMs (1997)



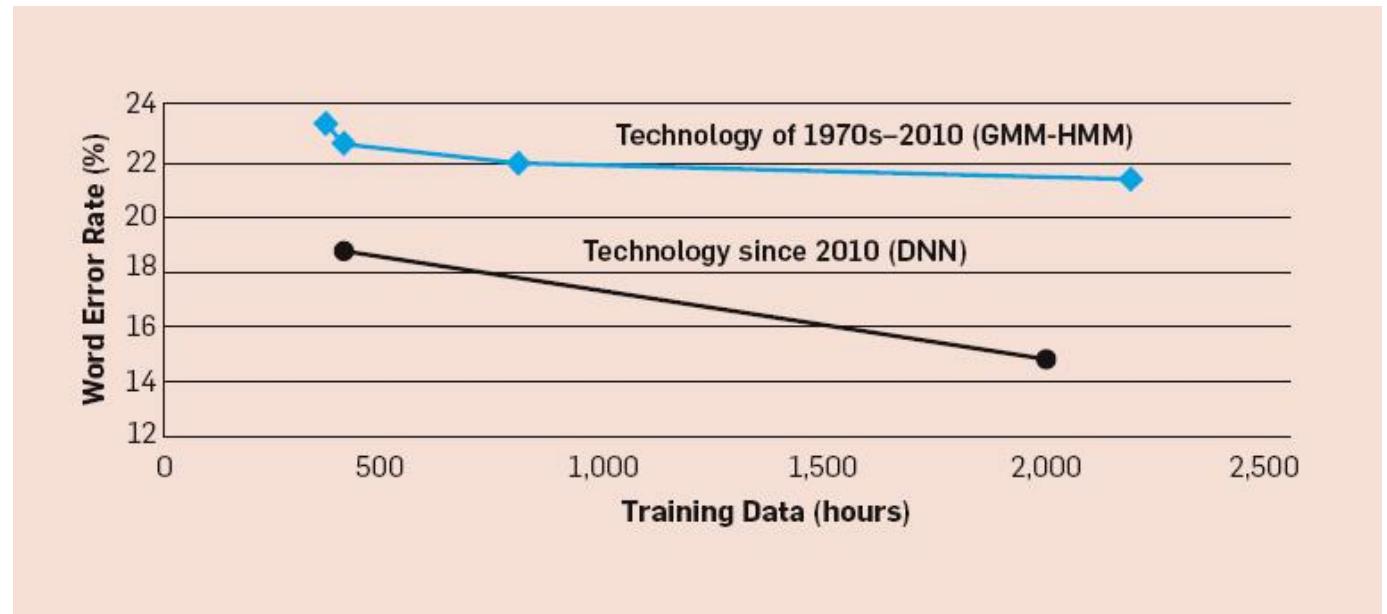
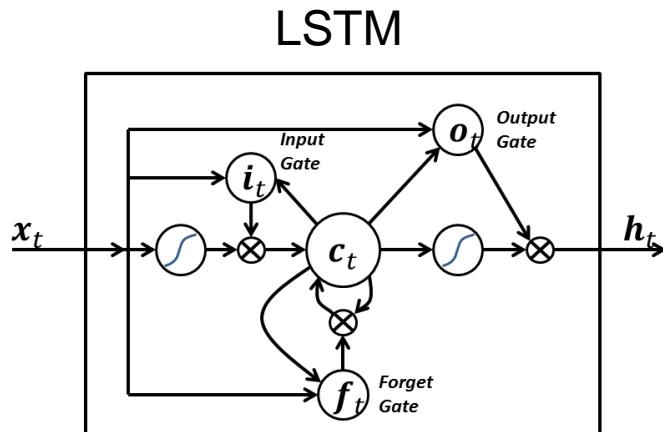
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Redes Neurais Recorrentes: LSTMs (1997)



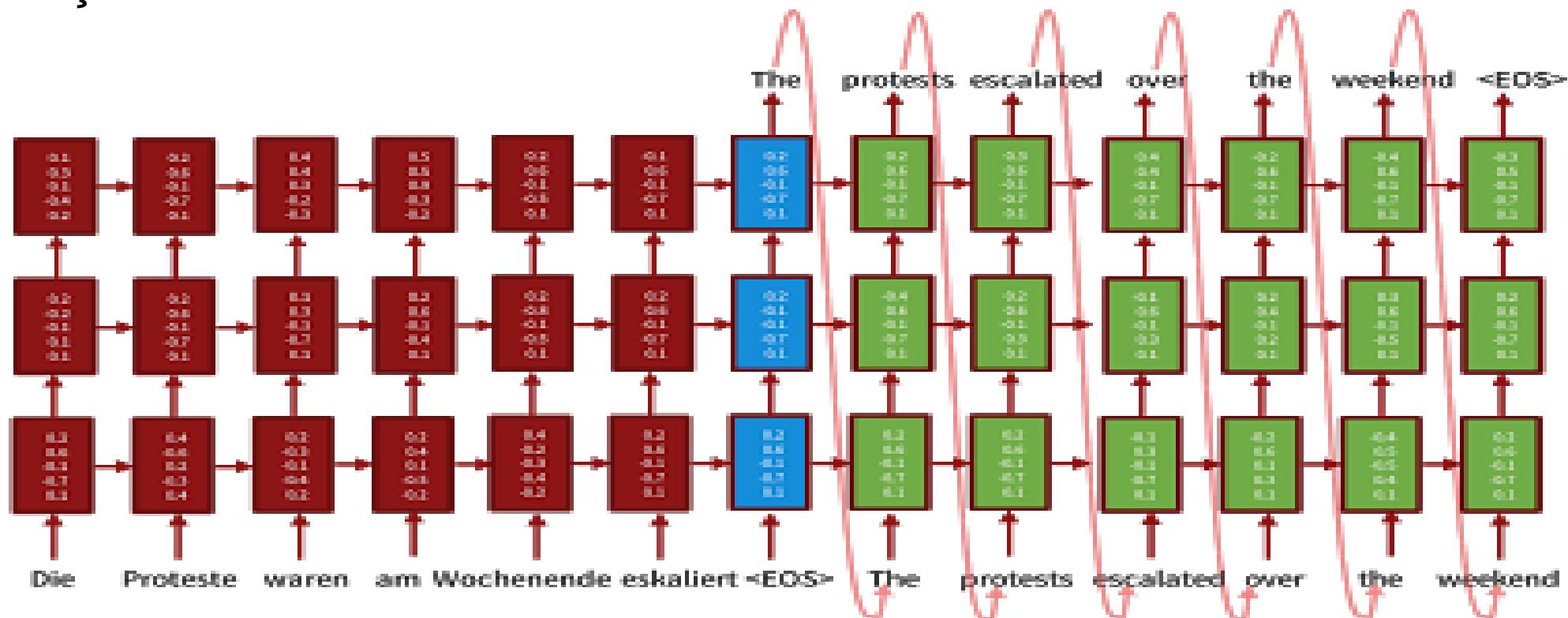
Marco: Reconhecimento de Fala

Redes Neurais Recorrentes: LSTMs (1997)



Marco: Tradução entre Idiomas

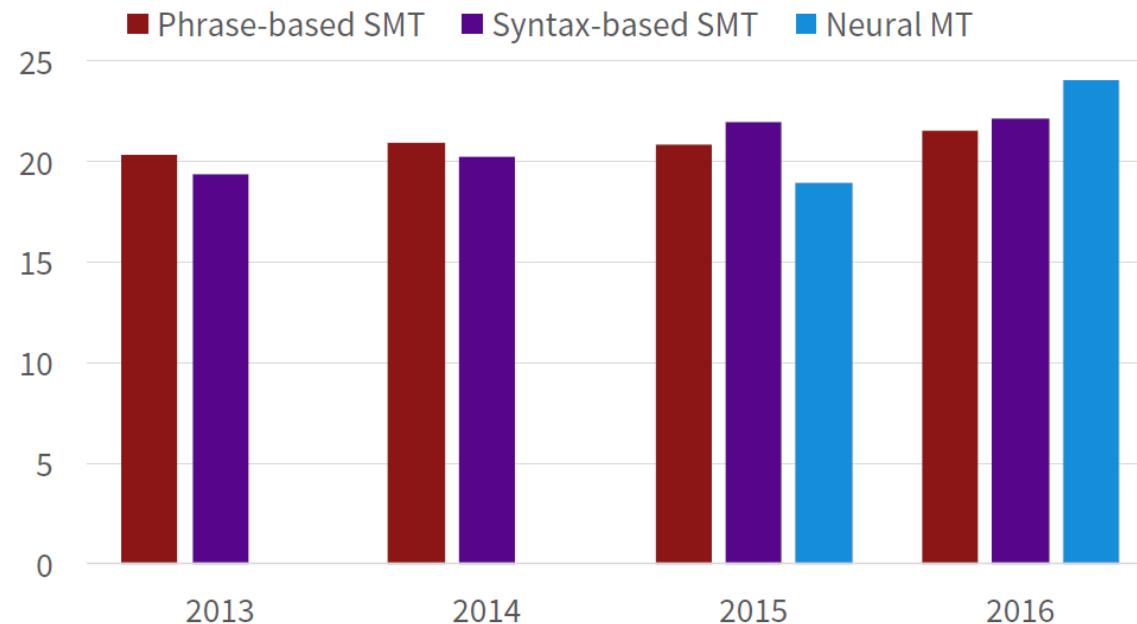
Modelos S2S (Sequence-to-sequence) com uso de LSTMs e de mecanismos de atenção



Marco: Tradução entre Idiomas

Modelos S2S (Sequence-to-sequence) com uso de LSTMs e de mecanismos de atenção

Progress in Machine Translation
[Edinburgh En-De WMT newstest2013 Cased BLEU; NMT 2015 from U. Montréal]



From [Sennrich 2016, http://www.meta-net.eu/events/meta-forum-2016/slides/09_sennrich.pdf]

Avanços no Processamento de Linguagem Natural

Task	Test set	Metric	Best non-neural	Best neural	Source
Machine Translation	Enu-deu newstest16	BLEU	31.4	34.8	http://matrix.statmt.org
	Deu-enu newstest16	BLEU	35.9	39.9	http://matrix.statmt.org
Sentiment Analysis	Stanford sentiment bank	5-class Accuracy	71.0	80.7	Socher+ 13
Question Answering	WebQuestions test set	F1	39.9	52.5	Yih+ 15
Entity Linking	Bing Query Entity Linking set	AUC	72.3	78.2	Gao+ 14b
Image Captioning	COCO 2015 challenge	Turing test pass%	25.5	32.2	Fang+ 15
Sentence compression	Google 10K dataset	F1	0.75	0.82	Filipova+ 15
Response Generation	Sordoni dataset	BLEU-4	3.98	5.82	Li+ 16a

Críticas

How smart is today's artificial intelligence?

Today's AI is super impressive, but it's not intelligent.

By Joss Fong | joss



INFOWORLD TECH WATCH

By Matt Asay, InfoWorld | MAR 3, 2017

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Artificially inflated: It's time to call BS on AI

We may have hit peak ludicrous mode for AI, flailing in a tsunami of AI-washing

Is AI Overhyped?

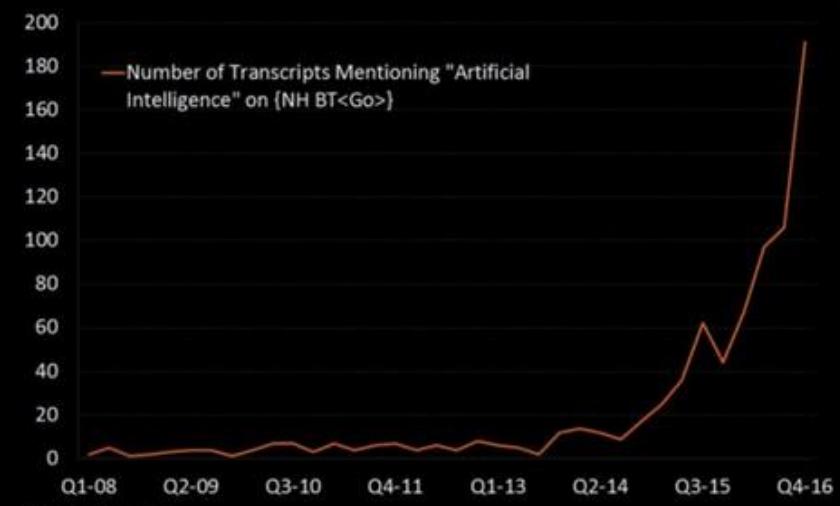


Forbes Technology Council

Elite CIOs, CTOs & execs offer firsthand insights on tech & business. [FULL BIO ▾](#)

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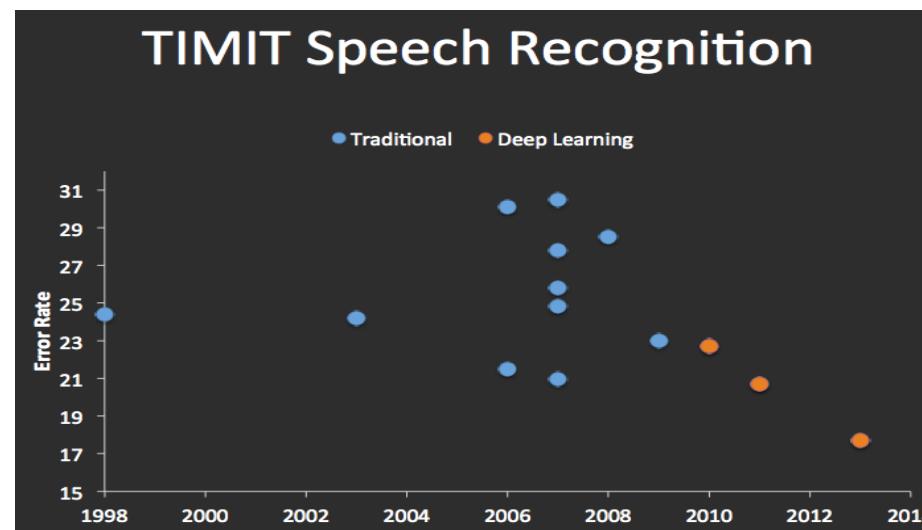
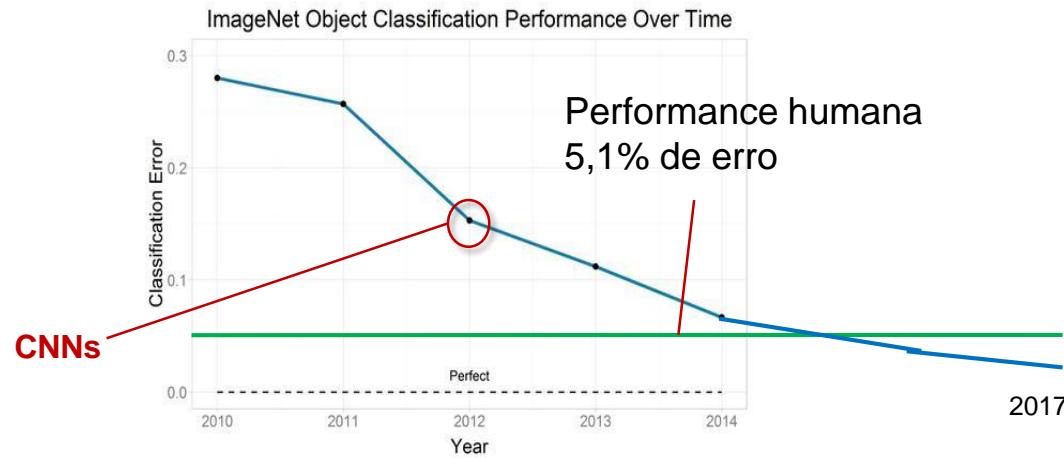
Companies Mentioning 'Artificial Intelligence' Rising Rapidly



Source: Bloomberg

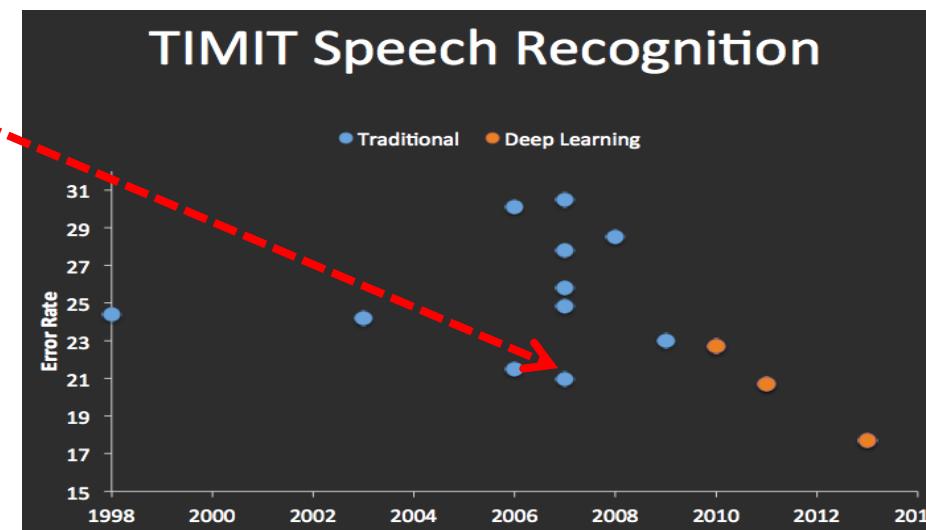
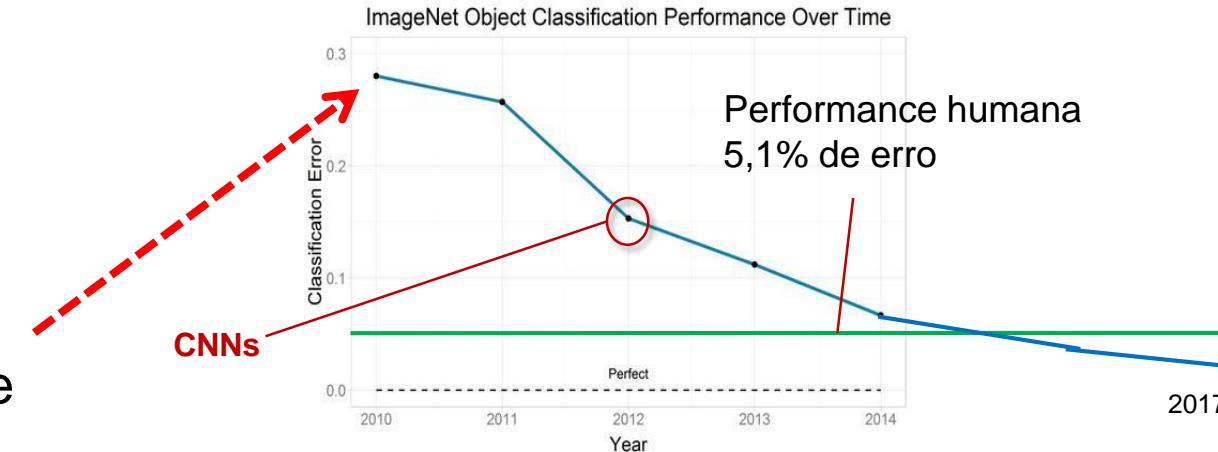
Bloomberg

Aprendizagem (IA) Clássica × Aprendizagem Profunda



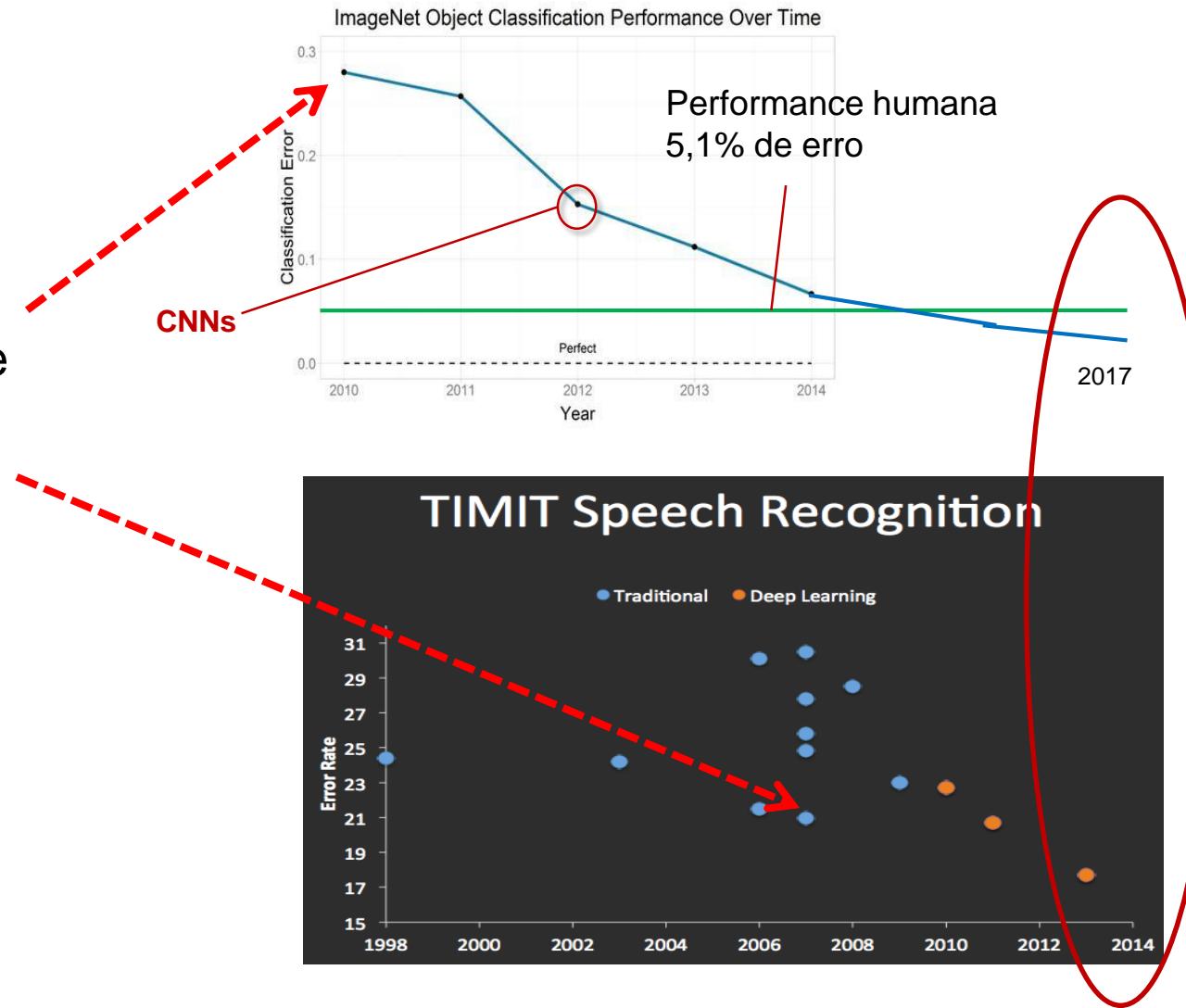
Aprendizagem (IA) Clássica × Aprendizagem Profunda

Limite de
Performance de
Abordagens
Clássicas



Aprendizagem (IA) Clássica × Aprendizagem Profunda

Limite de
Performance de
Abordagens
Clássicas



Qual será o limite
da Aprendizagem
Profunda?

Riscos

Alguns!

- Econômicos: deslocamento de empregos
- Existenciais: segurança, sistemas descontrolados



Hawking, Musk, Gates têm destacado os riscos das novas tecnologias de IA

Aprendendo sobre Redes Neurais e Aprendizagem Profunda

Redes Neurais Profundas exigem

“uma interação entre insights intuitivos, modelagem teórica, implementações práticas, estudos empíricos e análises científicas”

Yann Lecun (pesquisador-chefe do Facebook, pioneiro em redes profundas)

ou seja,

não existe uma estrutura única ou conjunto básico de princípios para explicar tudo!