

Hauptseminar Sommersemester 2015:

Cognitive Computing

Dr. Frank J. Furrer
[assisted by Georg Püschel]

Language: English

→ 3 ECTS Credits



Definition (1):

«Cognitive technologies are products of the field of artificial intelligence.»

Definition (2):

They are able to perform tasks that only humans used to be able to»

Source: <http://dupress.com/articles/what-is-cognitive-technology/> [last accessed: 31.12.2014]

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... some examples:



<http://www.automobilesreview.com>

Audi driverless car racing on Hockenheimring

KUKA industrial robot in table-tennis championship



<http://snapbuzz.net/tag/table-tennis>

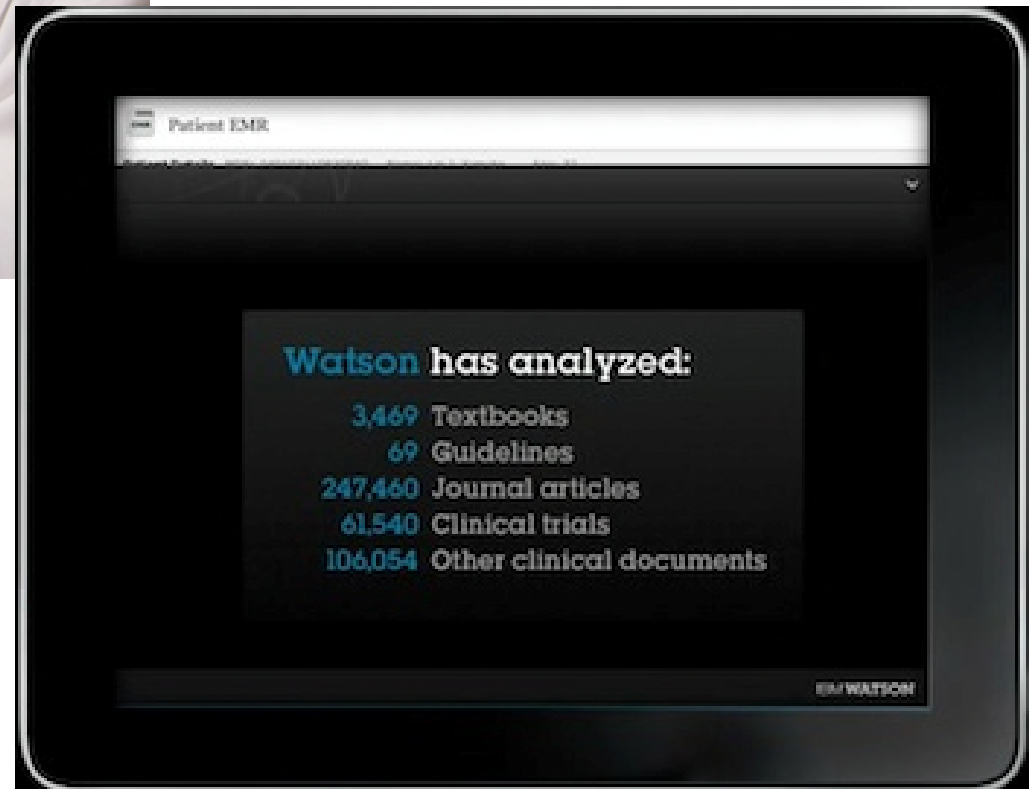
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... more examples:

IBM Watson cognitive computer assisting cancer diagnosis



<http://www.darkeaily.com>



... and more examples:

IBM Investor Briefing IBM

Cognitive Computing: *Watson 3.0*

Complex reasoning and interaction extends human cognition



- **Finance**
Enhance decision support
- **Healthcare**
Surface best protocols to practitioners
- **Legal**
Suggest defense/prosecution arguments
- **Telemarketing**
Next generation – persuasive – call center

Complex reasoning in various fields

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This seminar will work on answers to the central question: **Which are the situation, the challenges, and the impact of cognitive computing in the year 2025?**

Each participant chooses one of the 3 questions:

1. Which are the promising *software architectures* for cognitive computing?
2. How does cognitive computing enable *future applications*?
3. What is the *impact* of cognitive computing on people, work and society in 2025?

The Hauptseminar has 3 seminar days:

- An introduction day: Cognitive Computing will be introduced in a lecture by Dr. Frank J. Furrer and the parts of the Hauptseminar (Paper, presentation) will be defined,
- Individual, guided research in the selected area and authoring of a draft scientific paper. Feedback from peer reviewers,
- A first seminar day: The participants will present their results and receive feedback from the audience,
- Improvement of the paper and the presentation, based on the peer feedback,
- A second seminar day: The participants will present their improved results and receive feedback from the audience,
- Delivery of final paper

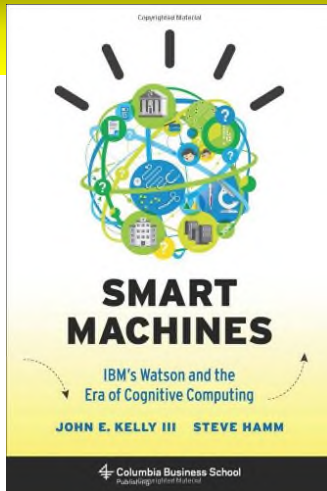
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Hauptseminar Kick-Off Meeting	Friday, April 17, 2015: 14:50 – 16:20 Room INF 2101
1st Seminar Day	Friday, June 5, 2015: 09:00 – 13:00 Room INF 2101
2nd Seminar Day	Friday, July 10, 2015: 09:00 – 13:00 Room INF 2101

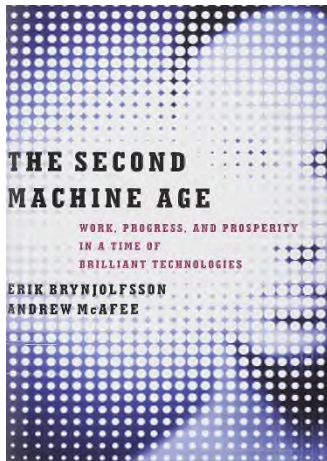
More information at (TUD HS Website):
http://bit.do/HS2015_CognitiveComputing

Hauptseminar limited to **8** participants

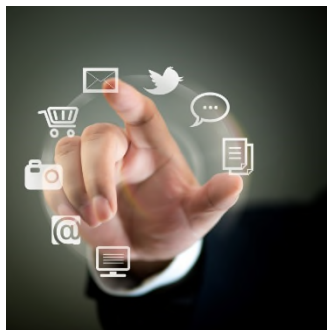
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[1] John E. Kelly III, Steve Hamm: **Smart Machines – IBM's Watson and the Era of Cognitive Computing.** Columbia University Press, N.Y., USA, 2013. ISBN 978-0-231-16856-4



[2] Erik Brynjolfsson, Andrew McAfee: **The Second Machine Age – Work, Progress, and Prosperity in a Time of Brilliant Technologies.** W.W. Norton & Company, Inc., N.Y., USA, 2014. ISBN 978-0-393-23935-5



[3] Eric W. Brown: **Cognitive Computing Ushers in New Era of IT.** 2014. Downloadable from: <http://www.forbes.com/sites/ibm/2014/02/03/cognitive-computing-ushers-in-new-era-of-it/> [last accessed: 8.9.2014]