



# Fuzzy Systems

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# About me: Rudolf Kruse

## Short CV

1979 Diploma in Mathematics (minor computer science) at TU Braunschweig

1980 Dissertation (Fuzzy Systems) , 1984 Habilitation (Data Analysis)

1984-1986 Full-time employee at Fraunhofer Institute (Artificial Intelligence)

1986-1996 Professor of computer science at TU Braunschweig

1996-2017 Professor of computer science at OVGU Magdeburg

Since 2017 Active Emeritus Professor at OVGU Magdeburg

## Research Topics

Data Science and Computational Intelligence

**Email** [rudolf.kruse@ovgu.de](mailto:rudolf.kruse@ovgu.de)

**Website** <https://www.is.ovgu.de/Team/Rudolf+Kruse.html>

# Intelligent Systems

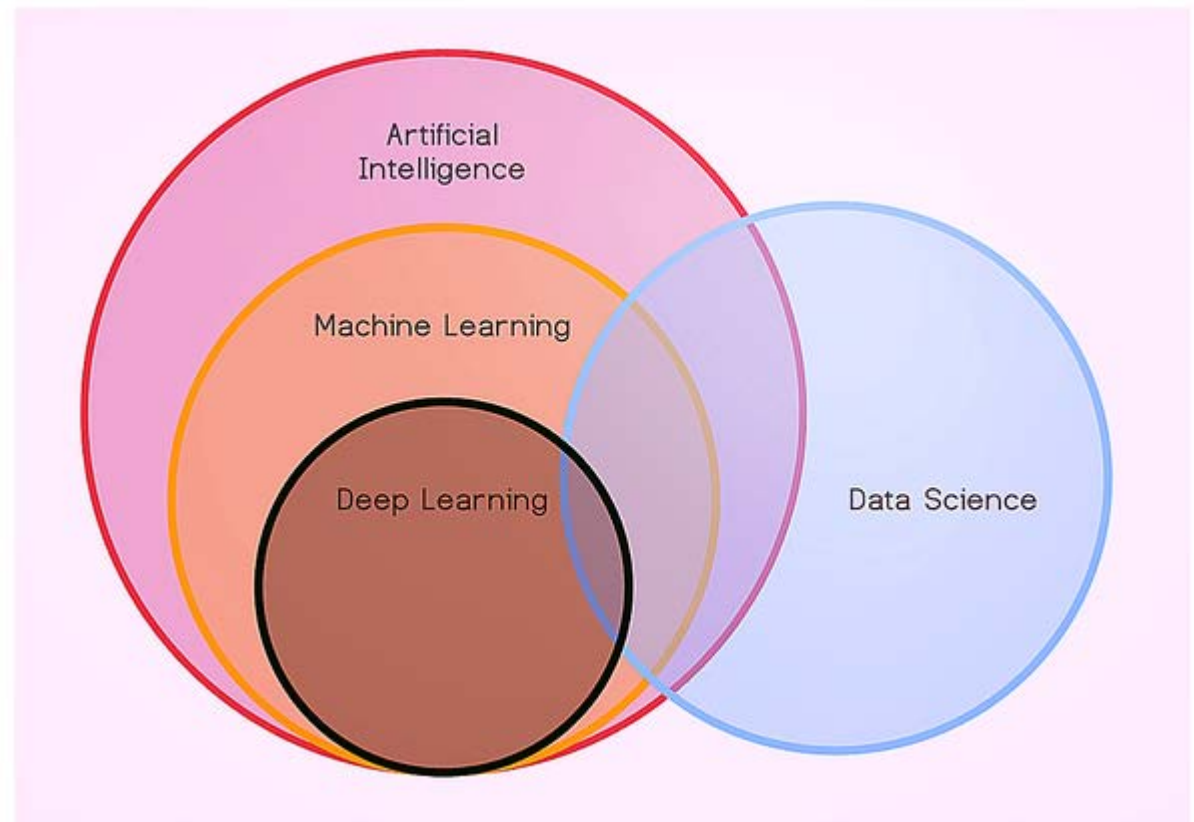
An „Intelligent“ System is a machine (a program) that is making human perception and understanding available

Lots of different Methods are used for developing “intelligent” Systems

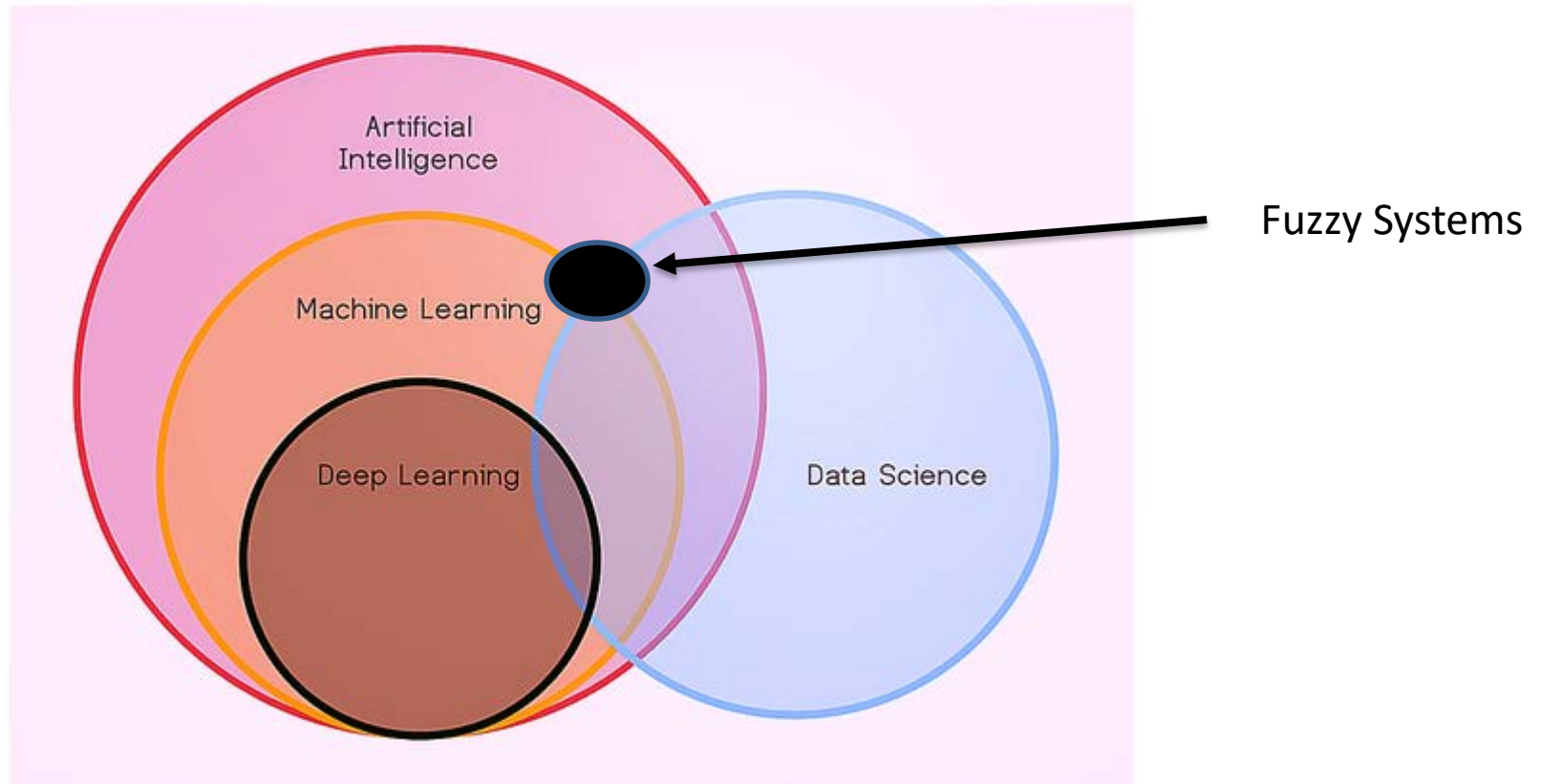
Knowledge-driven AI:  
logics, rules, graphs,...

Data-driven AI: probability  
statistics, machine learning,...

Real Applications are in most  
cases hybrid systems: They  
use several methods



# Methods for Developing „Intelligent“ Systems



# About the lecture

Introduction

Fuzzy Logic – a multivalued logic

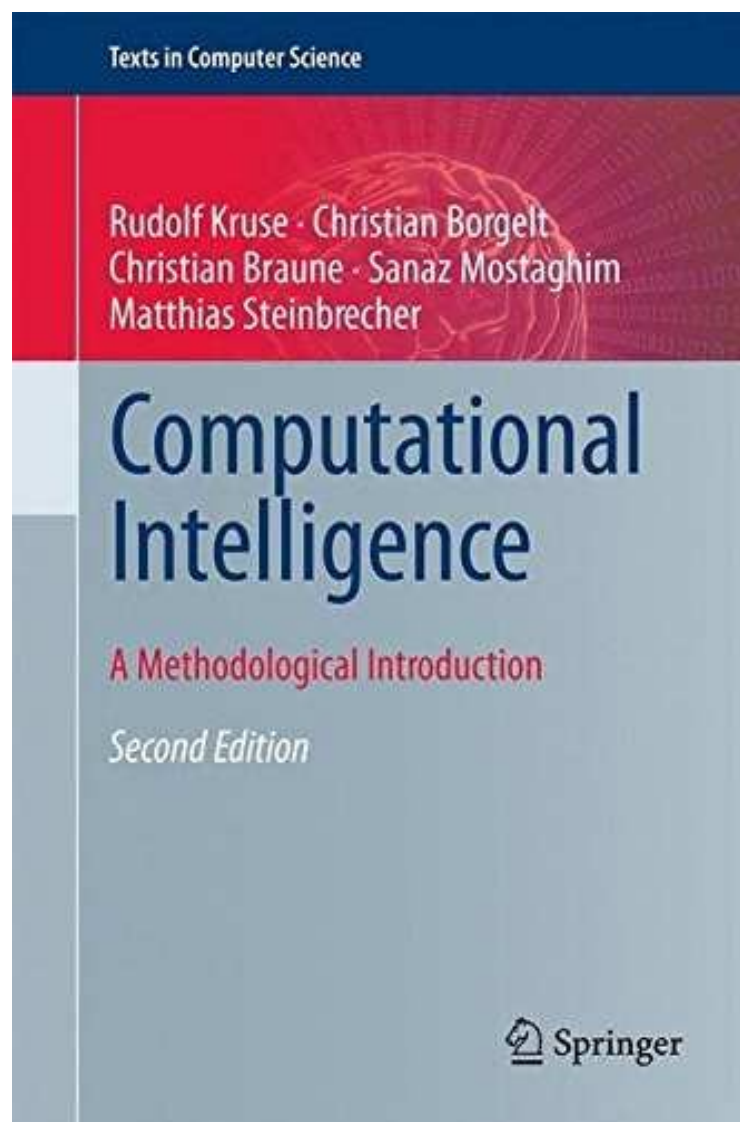
Fuzzy Set Theory

Applications in

- Control
- Data Analysis
- Decision Making

Learning Fuzzy Systems

# Books about the course



<http://www.computational-intelligence.eu/>

# About the lecture

Lecture dates: Thursday 11:15 –12:45

ZOOM Video Conference

Videos and streams of lectures on CCloud

Most important information about the course:

<https://www.is.ovgu.de/Teaching/SS2021/Fuzzy+Systems.html>

- Weekly lecture slides as PDF
- Assignment sheets for the exercise
- Announcements

## **Tutorials: Jonas Schulze**

### **Mode of the online tutorial**

- Active participation and explanations of your solutions
- Jonas will call attention to mistakes and answer questions
- Pure 'calculations' of sample solution is not the purpose

### **Exam or Certificate**

- Contribute well in exercises every week,
- Present  $\geq 2$  solutions to written assignment during exercises.
- Tick off  $\geq 66\%$  of all written assignments,
- Pass written exam (120 min), hopefully presence (otherwise open book)