## Computational Intelligence

**Winter Term 2019/20**

Prof. Dr. Günter Rudolph

Lehrstuhl für Algorithm Engineering (LS 11)

Fakultät für Informatik

TU Dortmund

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▶ **Organization (Lectures / Tutorials)**

▶ **Disambiguation:** *Computational Intelligence*

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Who are you?

either

studying "*Automation and Robotics*" (Master of Science)
Module "Optimization"

or

studying "*Informatik*" (Bachelor of Science)
Modul "Einführung in die Computational Intelligence"

or … let me know!

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Who am I ?

**Günter Rudolph**
Fakultät für Informatik, LS 11

Guenter.Rudolph@tu-dortmund.de     ← best way to contact me
OH-14, Room 2.32                   ← if you want to see me
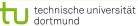
office hours:
Tuesday, 10:30–11:30am
and by appointment

**Lectures**       Wednesday     10:15-11:45     OH12, R. E.003,     weekly

**Tutorials**   <sub>either</sub> Thursday     16:00-17:30     OH14, R. 1.04, ≈ bi-weekly
         <sub>or</sub> Friday        14:15-15:45     OH14, R. 1.04, ≈ bi-weekly

**Tutor**         Marius Bommert, MSc, LS 11

**Information**
`http://ls11-www.cs.tu-dortmund.de/people/rudolph/`
`teaching/lectures/CI/WS2019-20/lecture.jsp`

**Slides**        see web page
**Literature**    see web page

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**Exams**

Effective since winter term 2014/15: written exam (not oral)

- Informatik, Bachelor: Module            → written exam (90 min)

- Automation & Robotics, Master: Module    → written exam (90 min)

- whoever else …                  → written exam (90 min)

**mandatory** for registration to written exam: **must pass tutorial**
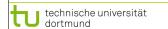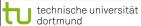
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**Knowledge** about

- mathematics,
- programming,
- logic

is helpful.

**But what if something is unknown to me?**

- covered in the lecture
- pointers to literature

**… and don't hesitate to ask!**

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What is CI ?

⇒ umbrella term for computational methods inspired by nature

- artifical neural networks
- evolutionary algorithms        }   backbone
- fuzzy systems

- swarm intelligence
- artificial immune systems    }   new developments
- growth processes in trees
- ...

- term „computational intelligence" made popular by John Bezdek (FL, USA)

- originally intended as a demarcation line
  $\Rightarrow$ establish border between artificial and computational intelligence

- nowadays: blurring border $\rightarrow$ current widespread perception: CI $\subset$ AI

**our goals:**

1. know what CI methods are good for!

2. know when refrain from CI methods!

3. know why they work at all!

4. know how to apply and adjust CI methods to your problem!