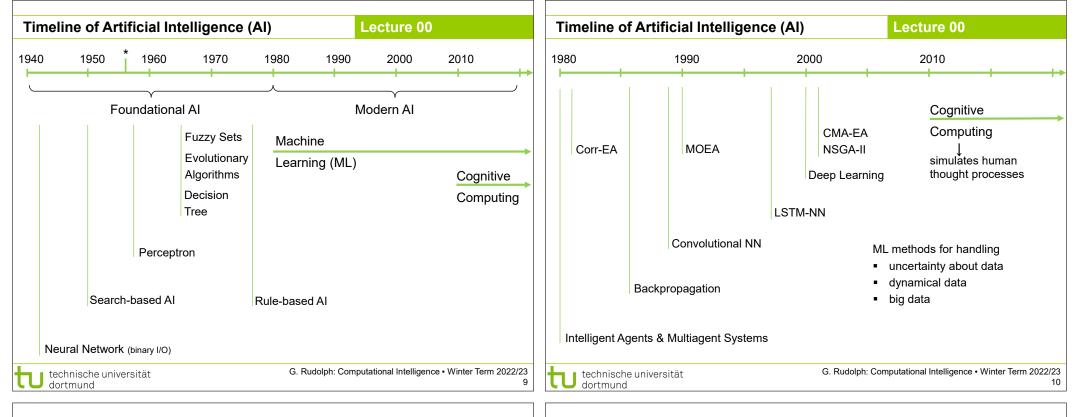
technische universität dortmund		Content	Lecture 00	
Computational Intelligence Winter Term 2022/23		<ul> <li>Organization (Lectures / Tutorials)</li> <li>Disambiguation: <i>Computational Intelligence</i></li> </ul>		
Prof. Dr. Günter Rudolph Lehrstuhl für Algorithm Engineering (LS 11) Fakultät für Informatik TU Dortmund				
		technische universität dortmund	G. Rudolph: Computational Intelligence • Winter Term 2022/23 2	
Organizational Issues	Lecture 00	Organizational Issues	Lecture 00	
Who are you?eitherstudying "Automation and Robotics" (Master of Science)orstudying "Informatics" (Bachelor of Science)orstudying "Data Science" (Master of Science)or let me know!		Who am I ? Günter Rudolph Fakultät für Informatik, LS 11 Guenter.Rudolph@tu-dortmund.de OH-14, Room 2.32 office hours: Tuesday, 10:30–11:30am and by appointment	<ul> <li>← best way to contact me</li> <li>← if you want to see me</li> </ul>	
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Organizational Issues	Lecture 0	0	Organization	al Issues	Lecture 00
•	):15-11:45 OH 14 / E23	weekly			
from 12-Oct-2022			Exams		
<u>ه</u> Thursday 12	2:15-13:45 OH 14 / 104 2:15-13:45 OH 14 / 104 4:15-15:45 OH 12 / 1.056	bi-weekly bi-weekly 6 bi-weekly	Effective sinc	e winter term 2014/15: written	exam (not oral)
from 19-Oct-2022 (groups	1-3) / 26-Oct-2022 (group 4-6)		<ul> <li>Informatik,</li> </ul>	Bachelor: Module	$\rightarrow$ written exam (90 min)
Tutor Marius Bommert, M Alexander van der			<ul> <li>Automation</li> </ul>	& Robotics, Master: Module	$\rightarrow$ written exam (90 min)
Gero Grühn, cand.	. BSc		Data Scien	ce / Statistics, Master: Module	$\rightarrow$ written exam (90 min)
<pre>Information (web pages &amp; moodl http://ls11-www.cs.tu-dortmu teaching/lectures/CI/WS2022-</pre>	ind.de/people/rudolph/		• whoever els	se	$\rightarrow$ written exam (90 min)
Tutorial infosee moodlSlidessee web pa			mandatory	for registration to written exam:	must pass tutorial!
U technische universität U dortmund	G. Rudolph: Computational Intellige	ence • Winter Term 2022/23 5	technische un dortmund	iversität G. R	udolph: Computational Intelligence • Winter Term 202
Prerequisites	Lecture 0	0	Concept Forr	mation & Demarcation Lines	Lecture 00
<ul> <li>Basic knowledge about</li> <li>mathematics,</li> </ul>			Mathematics	Computer Sc	ence Statistic
<ul><li>programming,</li></ul>					
			Logic	Artificial Intellig	
• logic is helpful.			Logic OR	Artificial Intellig	
• logic					Prin
• logic	own to me?		OR	Computational Intelligence	Machine Learning Data Niining Deep Learning Uting
<ul> <li>logic</li> <li>is helpful.</li> </ul> But what if something is unknown over the source of the source o	own to me?		OR	Computational Intelligence Soft Computing	Machine Learning Data Nining Deep Learning
<ul> <li>logic</li> <li>is helpful.</li> <li>But what if something is unknown</li> </ul>	own to me?		OR	Computational Intelligence Soft Computing	Machine Learning Data Niining Deep Learning Uting
<ul> <li>logic</li> <li>is helpful.</li> </ul> But what if something is unknown of the source of	own to me?		OR	Computational Intelligence Soft Computing	Machine Learning Data Niining Deep Learning Cognitic

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Overview "Computational Intellig	ence" Lecture 00	Overview "Computational Intelligence" Lecture 00
What is CI ? $\Rightarrow$ umbrella term for computation	al methods inspired by nature	<ul> <li>term "computational intelligence" made popular by John Bezdek (FL, USA)</li> <li>originally intended as a demarcation line</li> <li>⇒ establish border between artificial and computational intelligence</li> </ul>
<ul> <li>artifical neural networks</li> <li>evolutionary algorithms</li> <li>fuzzy systems</li> </ul>	historical backbone	• nowadays: blurring border $\rightarrow$ current widespread perception: CI $\subset$ AI
<ul> <li>swarm intelligence</li> <li>artificial immune systems</li> <li>growth processes in trees</li> </ul>	> newer developments	our goals: 1. know what CI methods are good for! 2. know when refrain from CI methods!
•		<ul><li>3. know why they work at all!</li><li>4. know how to apply and adjust CI methods to your problem!</li></ul>
U technische universität dortmund	G. Rudolph: Computational Intelligence • Winter Term 2	2022/23 11 U technische universität G. Rudolph: Computational Intelligence • Winter Term 2022/2 11 dortmund