

Elective Course in Computer Science: Deep Learning

Title	Elective Course in Computer Science: Deep Learning
Semester	E2023
Master programme in	Computer Science
Type of activity	Course
Teaching language	English
Study regulation	<p>You register for activities through stads selvbetjening during the announced registration period, which you can see on the Study administration homepage.</p> <p>When registering for courses, please be aware of the potential conflicts and overlaps between course and exam time and dates. The planning of course activities at Roskilde University is based on the recommended study programmes, which should not overlap. However, if you choose optional courses and/or study plans that goes beyond the recommended study programmes, an overlap of lectures or exam dates may occur depending on which courses you choose.</p>

REGISTRATION AND STUDY ADMINISTRATIVE

Registration	Read about the Master Programme and find the Study Regulations at ruc.dk
Number of participants	
ECTS	5
Responsible for the activity	Henning Christiansen (henning@ruc.dk)
Head of study	Henrik Bulskov (bulskov@ruc.dk)
Teachers	
Study administration	IMT Registration & Exams (imt-exams@ruc.dk)
Exam code(s)	U60598

ACADEMIC CONTENT

Overall objective	The purpose of elective courses is to give the student opportunities to specialize within a specific subject area, where the student acquires knowledge, skills and competences in order to translate theories, methods and solutions ideas into their own practice.
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Detailed description of content	<p>The course includes - Fundamental concepts of Machine Learning and Artificial Neural Networks. - Deep learning architectures and tool - Different types of deep networks (for images, text, ...) - Defining deep learning tasks, prepare data, train and deploy deep models.</p> <p>Software tools: Python, TensorFlow, Keras (some familiarity with Python will be an advantage).</p>
Course material and Reading list	<p>François Chollet: Deep learning with Python, Second Edition. Manning, 2021.</p> <p>Course notes and scientific papers made available on moodle.</p>
Overall plan and expected work effort	<p>The course's 5 ECTS correspond to a total of 135 hours workload with:</p> <ul style="list-style-type: none"> • 40 hours lectures and exercises, • 70 hours of preparation over a 10 week course period, and • 25 hours for the exam and preparation before the course period.
Format	
Evaluation and feedback	<p>Evaluation form to be filled out (anonymously) plus open discussion on the last course day.</p>
Programme	
ASSESSMENT	
Overall learning outcomes	<p>After completing this course, students will be able to:</p> <ul style="list-style-type: none"> • demonstrate knowledge within a defined subject area. • demonstrate an overall overview and understanding of the general principles behind the field's theory, methods and technological solutions. • choose and apply appropriate methods and techniques relevant to the field to analyse, design and implement solutions • work with it-related problems within their field, both individually and in groups. • be proficient in new approaches within the subject area in a critical and systematic way and thereby independently take responsibility for their own professional development.
Form of examination	<p>Individual oral exam based on a written product</p> <p>The character limit of the written product is maximum 48,000 characters, including spaces. The character limits include the cover, table of contents, bibliography, figures and other illustrations, but exclude any appendices.</p> <p>Time allowed for exam including time used for assessment: 20 minutes. The assessment is an overall assessment of the written product(s) and the subsequent oral examination.</p> <p>Permitted support and preparation materials for the oral exam: All.</p> <p>Assessment: 7-point grading scale. Moderation: Internal co-assessor.</p>

Form of Re-examination	Samme som ordinær eksamen / same form as ordinary exam
Type of examination in special cases	
Examination and assessment criteria	
Exam code(s)	Exam code(s) : U60598

Course days:

Hold: 1

Deep Learning (COMP)

time 11-09-2023 12:15 til
11-09-2023 16:00

location 10.1-025 - teorirum (32)

Teacher Henning Christiansen (henning@ruc.dk)

Deep Learning (COMP)

time 18-09-2023 12:15 til
18-09-2023 16:00

location 10.1-025 - teorirum (32)

Teacher Henning Christiansen (henning@ruc.dk)

Deep Learning (COMP)

time 25-09-2023 12:15 til
25-09-2023 16:00

location 10.1-025 - teorirum (32)

Teacher Henning Christiansen (henning@ruc.dk)

Deep Learning (COMP)

time 02-10-2023 12:15 til
02-10-2023 16:00

location 10.1-025 - teorirum (32)

Teacher Henning Christiansen (henning@ruc.dk)

Deep Learning (COMP)

time 09-10-2023 12:15 til
09-10-2023 16:00

location 10.1-025 - teorirum (32)

Teacher Henning Christiansen (henning@ruc.dk)

Deep Learning (COMP)

time 16-10-2023 12:15 til
16-10-2023 16:00

location 10.1-025 - teorirum (32)

Teacher Henning Christiansen (henning@ruc.dk)

Deep Learning (COMP)

time 23-10-2023 12:15 til
23-10-2023 16:00

location 10.1-025 - teorirum (32)

Teacher Henning Christiansen (henning@ruc.dk)

Deep Learning (COMP)

time 30-10-2023 12:15 til
30-10-2023 16:00

location 10.1-025 - teorirum (32)

Teacher Henning Christiansen (henning@ruc.dk)

Deep Learning (COMP)

time 06-11-2023 12:15 til
06-11-2023 16:00

location 10.1-025 - teorirum (32)

Teacher Henning Christiansen (henning@ruc.dk)

Deep Learning (COMP)

time 13-11-2023 12:15 til
13-11-2023 16:00

location 10.1-025 - teorirum (32)

Teacher Henning Christiansen (henning@ruc.dk)

Deep Learning - Hand-in (COMP)

time 20-11-2023 10:00 til
20-11-2023 10:00

forberedelsesnorm ikke valgt

forberedelsesnorm D-VIP ikke valgt

Deep Learning - Oral examination (COMP)

time 09-01-2024 08:15 til
10-01-2024 18:00

forberedelsesnorm ikke valgt

forberedelsesnorm D-VIP ikke valgt

Deep Learning - Reexam - Hand-in (COMP)

time 21-02-2024 10:00 til
21-02-2024 10:00

forberedelsesnorm ikke valgt

forberedelsesnorm D-VIP ikke valgt

Deep Learning - Oral reexamination (COMP)

time	28-02-2024 08:15 til 28-02-2024 18:00
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forberedelsesnorm D-VIP	ikke valgt
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