

Deep Learning for visual recognition

Understand the details of deep learning for visual recognition

Understanding Deep Learning

The deep learning revolution has given us self-driving cars, Google translate, Siri and much more.

Visual recognition (or computer vision) is the most established field within the area of deep learning, and offers the best way to learn more about it.

With this 2-day course, learn how to implement, train and debug your own neural networks. You'll also gain a comprehensive understanding of neural network architectures and insight into cutting-edge research into deep learning.

Exercises

The hands-on programming exercises involve setting up computer vision problems, such as:

- image classification
- applying learning algorithms
- practical engineering tricks for training, as well as fine-tuning the networks.

We'll discuss how to apply deep learning for other data types, such as text, speech, and tabular data.

Who can participate?

- Software developers and engineers who want to expand their toolbox with deep learning will benefit particularly from this course.
- You'll be reading and writing code in Python throughout the course. You do not need to be familiar with Python but basic programming skills are required
- You do not need any prior knowledge of [machine learning](#).
- The course requires basic mathematics.

Benefits

Benefits for you:

- Identifying and describing visual recognition tasks that can be solved using deep learning
- Describing and comparing different neural networks architectures
- Explaining and relating techniques for training neural networks
- Applying deep learning to standard visual recognition tasks and assessing the results
- Defining and scoping your own deep learning projects

Benefits for your company:

- A competitive advantage by having employees with deep learning competences
- Improved ability to collect and exploit data in the future
- A higher chance of retaining employees with an interest in AI

Kursusoversigt

Dato	Sted	Modul	Overnatning	Ledighed
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Se opdaterede datoer og priser via linket nedenfor:

<https://www.mannaz.com/da/kurser-og-uddannelser/deep-learning-for-visual-recognition/>

The programme

Practical information

The practical use of deep learning techniques is the primary focus of the course, while the theory is also covered.

You'll have hands-on training under expert instruction and opportunities to ask questions throughout the course.

Most importantly, using the knowledge in a practical context will enable you to use deep learning in your daily work.

Day 1

9am to 4pm

- Machine learning fundamentals
- Logistic and linear regression
- Simple neural networks
- Training neural networks. This will include topics such as optimisation, transfer learning, back propagation, and regularisation techniques to avoid overfitting.

Day 2

9am to 4pm

- Convolutional neural networks
- Advanced neural network architectures. This will include topics such as recurrent neural networks, ResNet, and generative adversarial networks (GANs).

Before the course

You need to have, or be willing to create, a Google account (that is, gmail). It's best to do this before the course.

To get the most benefit from the course, remind yourself of the following:

- basic linear algebra, such as inner products and matrix/vector multiplication
- basic calculus, such as differentiation, and especially the chain rule
- simple probability theory, such as probability distributions.

During the course

You need to bring your own laptop.

You'll need an internet browser, ideally Google Chrome. However, there are no hardware requirements (like GPU) and no need to install special software.

After the course

Though there won't be any follow-up work, you're welcome to consult with the instructor if you need help setting up your own projects.

Instructor

Henrik Pedersen

The course instructor is Henrik Pedersen (PhD), Head of Visual Computing Lab at the Alexandra Institute. Henrik is lecturer at the Department of Computer Science at Aarhus University (AU), where he teaches the full-semester course, Deep Learning for Visual Recognition. Throughout his career, Henrik has had various academic roles, covering research as well as teaching in computer vision and deep learning. With years of experience, he is a skilled educator and has played a key role in creating the vibrant deep learning community at both the Alexandra Institute and AU's computer science department.

Mannaz works in close collaboration with [IDA, The Danish Society of Engineers](#).

When you sign up for this course, Mannaz handles your registration, while IDA manages the course execution.

Your name, e-mail and telephone number will be passed on to IDA. The contact information is used exclusively in connection with the course.



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