

# Course intro

Machine Learning Operations

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Postdoc

DTU Compute

# Who am I?



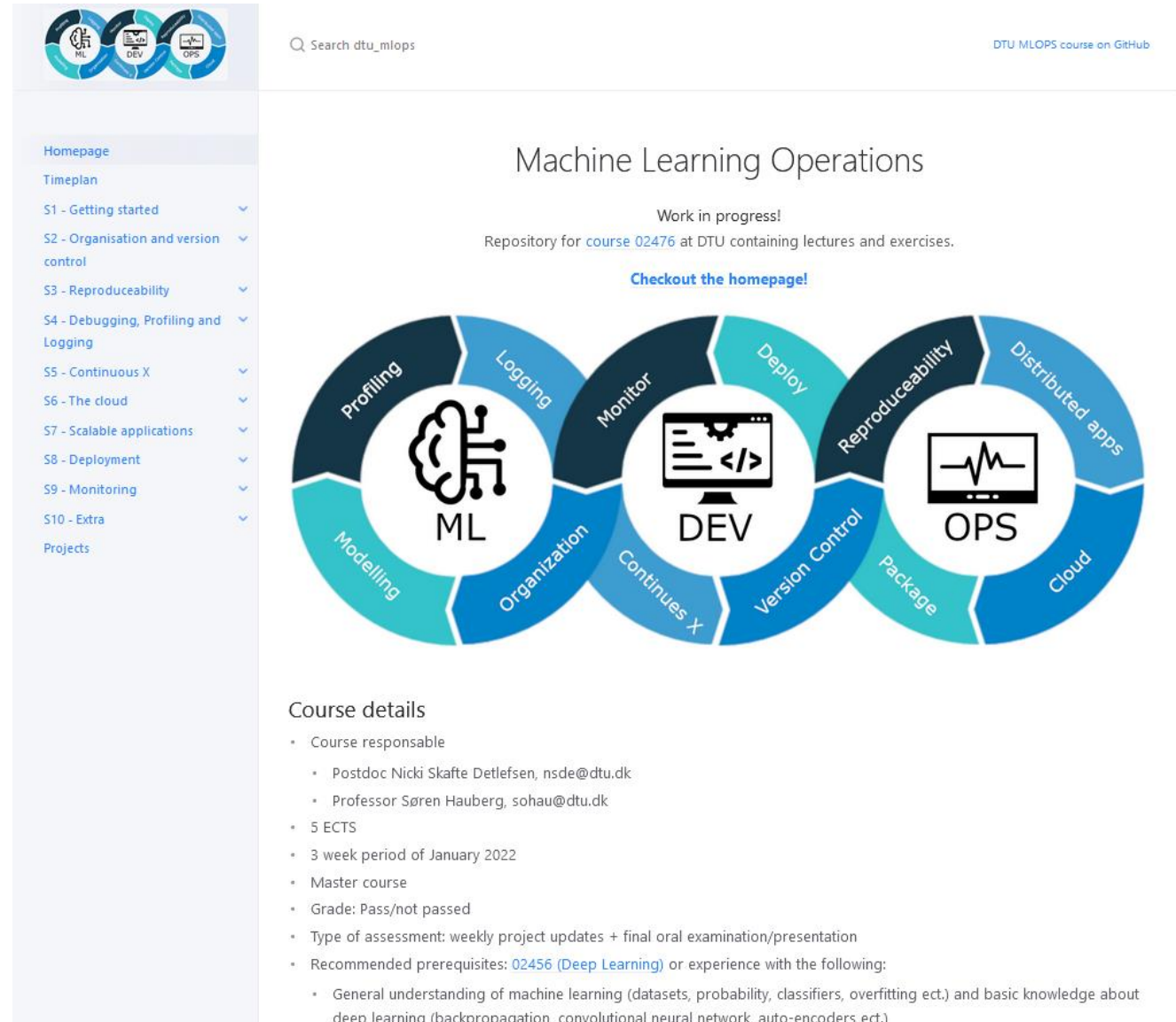
- Bachelor, Master and PhD from DTU
- Currently: Postdoc at section for cognitive systems
- Focus: Inductive biases in deep learning
- Eager open-source contributor

The screenshot shows the GitHub profile of Nicki Skaftes. The profile includes a circular profile picture, the name 'Nicki Skaftes' with the handle 'SkaftesNicki', and a bio stating 'Postdoc at section for Cognitive Systems (CogSys), Technical University of Denmark (DTU). Main focus: Generative models and geometrical deep learning.' It also shows '49 followers · 3 following · 31 stars', location 'Denmark', and email 'skaftenicki@gmail.com'. The 'Pinned' section lists four repositories: 'ddtn', 'Deep\_LMNN', 'libcpab', and 'pyclust'. The 'Contributions' section shows a heatmap for the last year with 1,075 contributions. The 'Contribution activity' section shows a bar chart for the year 2021, indicating 42 commits in 4 repositories.

# Who am I?



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The screenshot shows the DTU MLOps course homepage. At the top, there's a navigation bar with a logo on the left, a search bar containing 'Search dtu\_mlops', and a link 'DTU MLOPS course on GitHub' on the right. Below the navigation bar is a sidebar menu on the left with links: 'Homepage', 'Timeplan', 'S1 - Getting started', 'S2 - Organisation and version control', 'S3 - Reproducibility', 'S4 - Debugging, Profiling and Logging', 'S5 - Continuous X', 'S6 - The cloud', 'S7 - Scalable applications', 'S8 - Deployment', 'S9 - Monitoring', 'S10 - Extra', and 'Projects'. The main content area has the title 'Machine Learning Operations' and a subtitle 'Work in progress! Repository for course 02476 at DTU containing lectures and exercises.' Below this is a link 'Checkout the homepage!'. The central graphic is a circular diagram with three overlapping circles labeled 'ML', 'DEV', and 'OPS'. The 'ML' circle contains 'Modelling' and 'Profiling'. The 'DEV' circle contains 'Logging', 'Monitor', 'Organization', and 'Continuous X'. The 'OPS' circle contains 'Deploy', 'Reproducibility', 'Version Control', 'Package', 'Distributed apps', and 'Cloud'. Below the diagram is a 'Course details' section with a bulleted list: 'Course responsible' (Postdoc Nicki Skafté Detlefsen, nsde@dtu.dk; Professor Søren Hauberg, sohau@dtu.dk), '5 ECTS', '3 week period of January 2022', 'Master course', 'Grade: Pass/not passed', 'Type of assessment: weekly project updates + final oral examination/presentation', and 'Recommended prerequisites: 02456 (Deep Learning) or experience with the following: General understanding of machine learning (datasets, probability, classifiers, overfitting ect.) and basic knowledge about deep learning (backpropagation, convolutional neural network, auto-encoders ect.)'.

# Course settings



- 5 ECTS
- 3 weeks period
- Level: Master
- Grade: Pass/not passed
- Type of assessment: weekly project updates + final oral examination/presentation
- Recommended prerequisites: 02456 (Deep Learning) or
  - General understanding of machine learning (datasets, probability, classifiers, overfitting etc..) and
  - Basic knowledge about deep learning (backpropagation, convolutional neural network, auto-encoders etc..)
  - Coding in Pytorch

# Course webpage

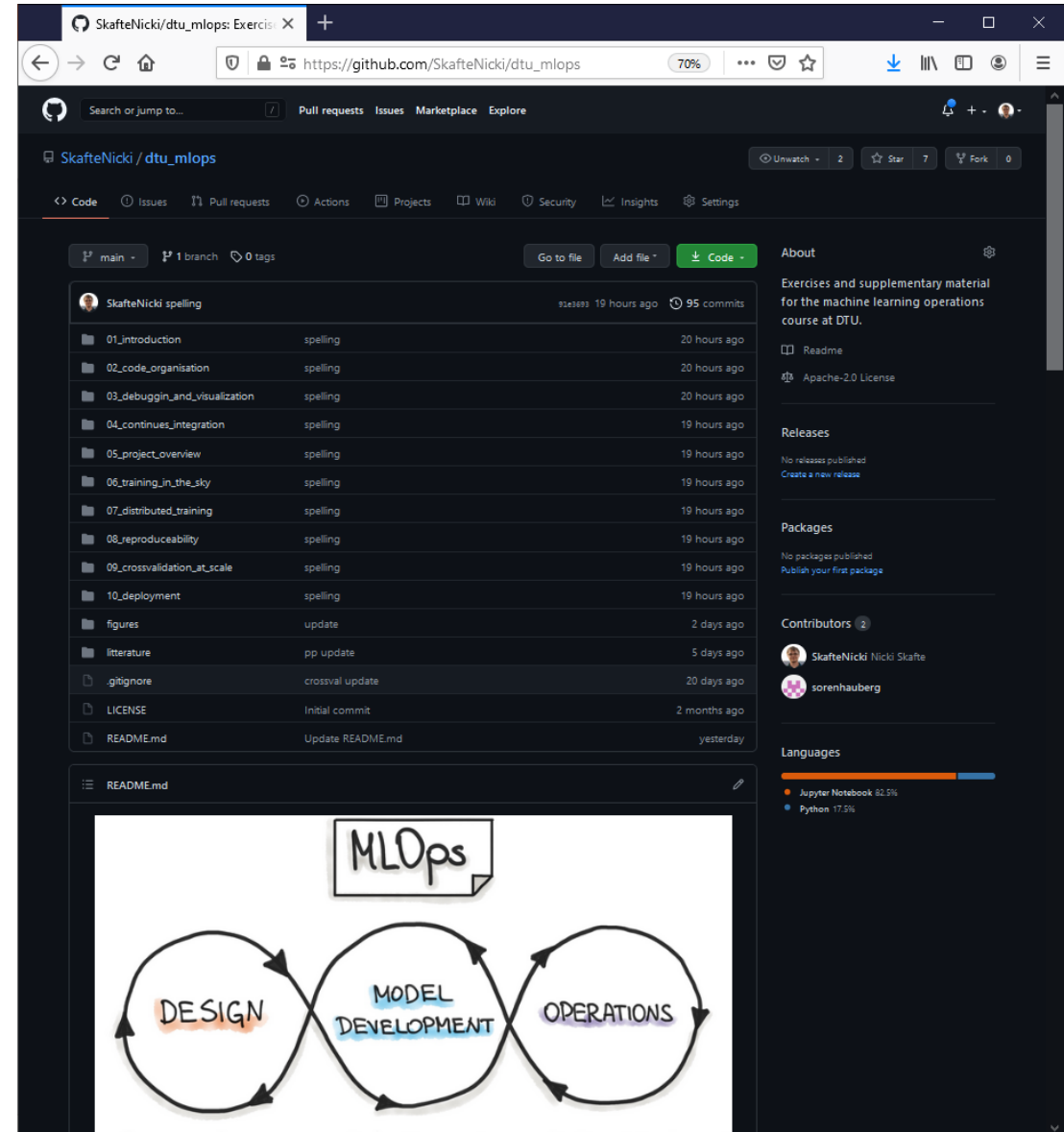


Webpage with lectures + exercises:

[https://skaftenicki.github.io/dtu\\_mlops/](https://skaftenicki.github.io/dtu_mlops/)

Join slack for communication:

[https://join.slack.com/t/slack-ddr8461/shared\\_invite/zt-qzk7ho8z-1tBT\\_SkkkxtpgMU8x197pg](https://join.slack.com/t/slack-ddr8461/shared_invite/zt-qzk7ho8z-1tBT_SkkkxtpgMU8x197pg)



# What is this course/What is it not



- What is this course:

- Introduce the student to a number of coding practices that will help them organization, scale, monitor and deploy machine learning models either in a research or production setting. To provide hands-on experience with a number of frameworks, both local and in the cloud, for doing large scale machine learning models.
- Keywords:
  - Organization
  - Scalability
  - Reproducibility
  - Hands-on experience

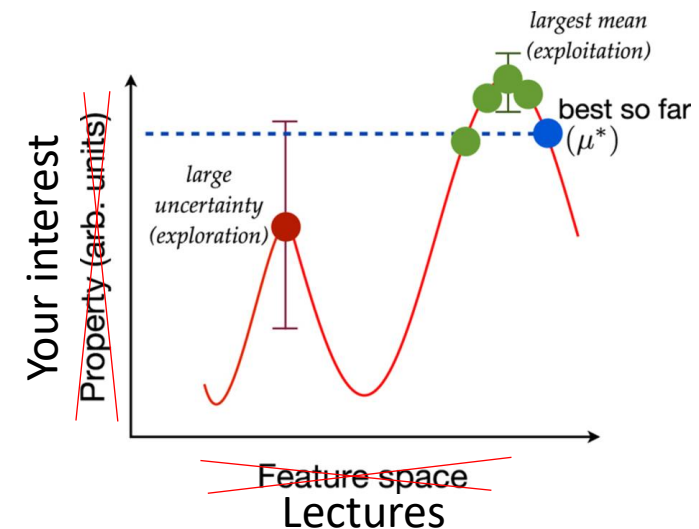
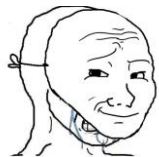
- What this course is not:

- How deep learning models works (02456)

# What do I expect from you



- Second iteration of this course
- This course is still in its development phase, meaning that the material may be suboptimal
- We provide lectures, exercises and guidance but encourage self-study
- Make sure to both explore and exploit it!
- Physical attendance is expected, but not required
- Provide all the feedback you have, I can take it!



# I typical day



- Exercise days:
  - Meet in at 9:00
  - Lecture for 15-30 mins
    - I am still learning how to do lectures
    - Lectures are not meant to give teach you anything, but provide some context to the topic of the day
  - Exercises until 14:00
    - Remember to take a lunch break
    - If you are not done at 14:00, you are still free to leave. Rooms are booked until 17:00.
- Project days:
  - Sometimes a small lecture or company presentation
  - Rest of the day you decide
  - Office hour



# What I hope from this course



- Have fun!
- Playing around with the different frameworks
- Maybe learn something along the way

People with no idea  
about AI, telling me my  
AI will destroy the world

Me wondering why my  
neural network is  
classifying a cat as a dog..



## hygge

[hue-gah] *noun*

An atmosphere of warmth, wellbeing, and cosiness when you feel at peace and able to enjoy simple pleasures and being in the moment.

# A note on the projects



- Approximately 1/3 of the course time is spend on project work
- More info here:  
[https://skaftenicki.github.io/dtu\\_mlops/projects](https://skaftenicki.github.io/dtu_mlops/projects)
- Already now you are recommende to think about forming groups of
  - 4 people
  - 3 and 5 is also acceptable
- Thursday we will do some speeddating to form groups for people not already having one. Also feel free to write in the *#find-a-group* slack channel.