19.04.2023

OPENCAMPUS.sh

Machine Learning Operations (MLOps)

GENERAL INTRODUCTION

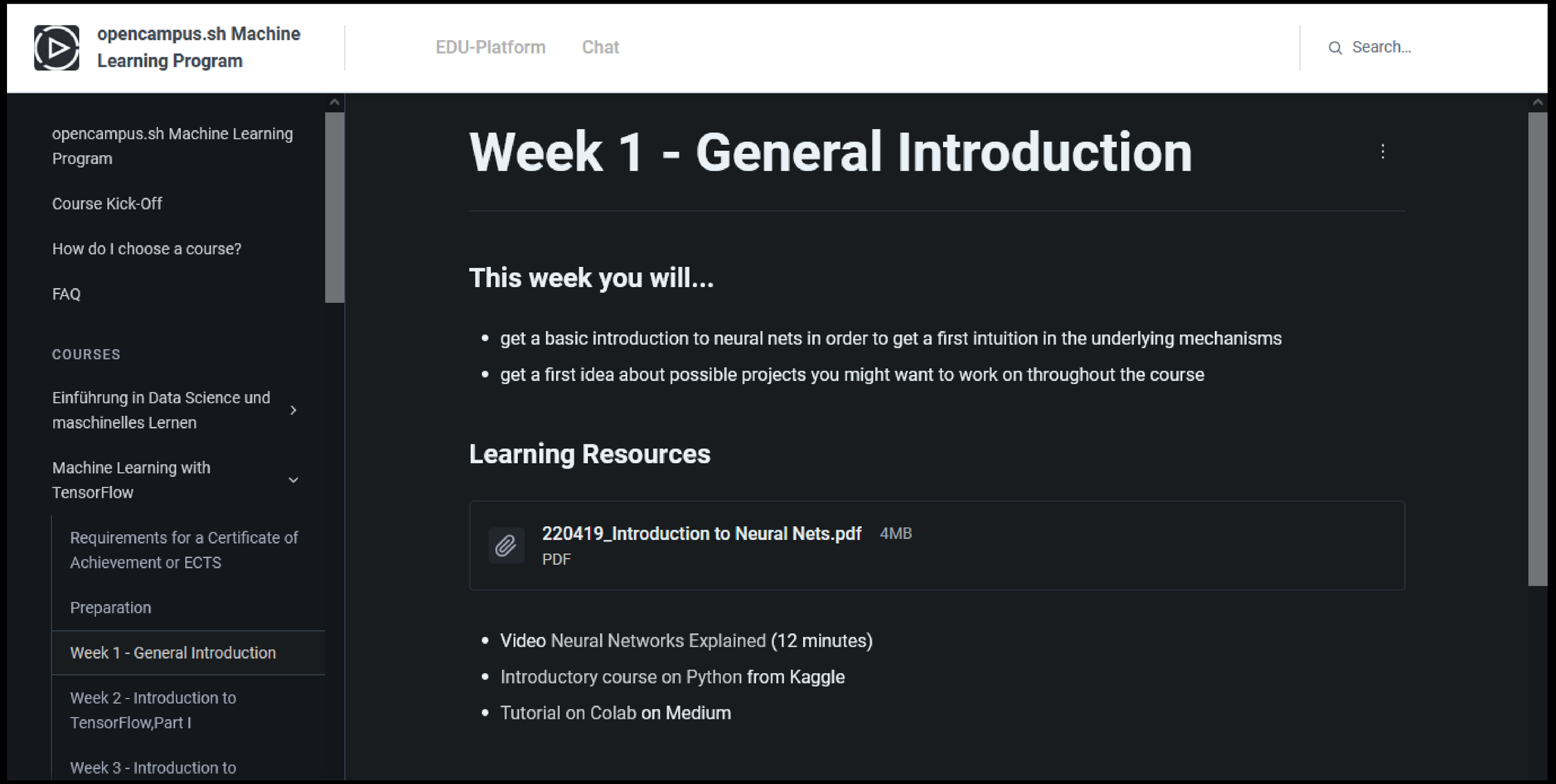
- Personal Introduction
- Organizational Matters
- Introductory Discussion
- Coursera Registration
- Course Projects
- Potential Projects with opencampus.sh

PERSONAL INTRODUCTION

CHAT

- **Please, ask questions to us in the chat**

COURSE HANDBOOK



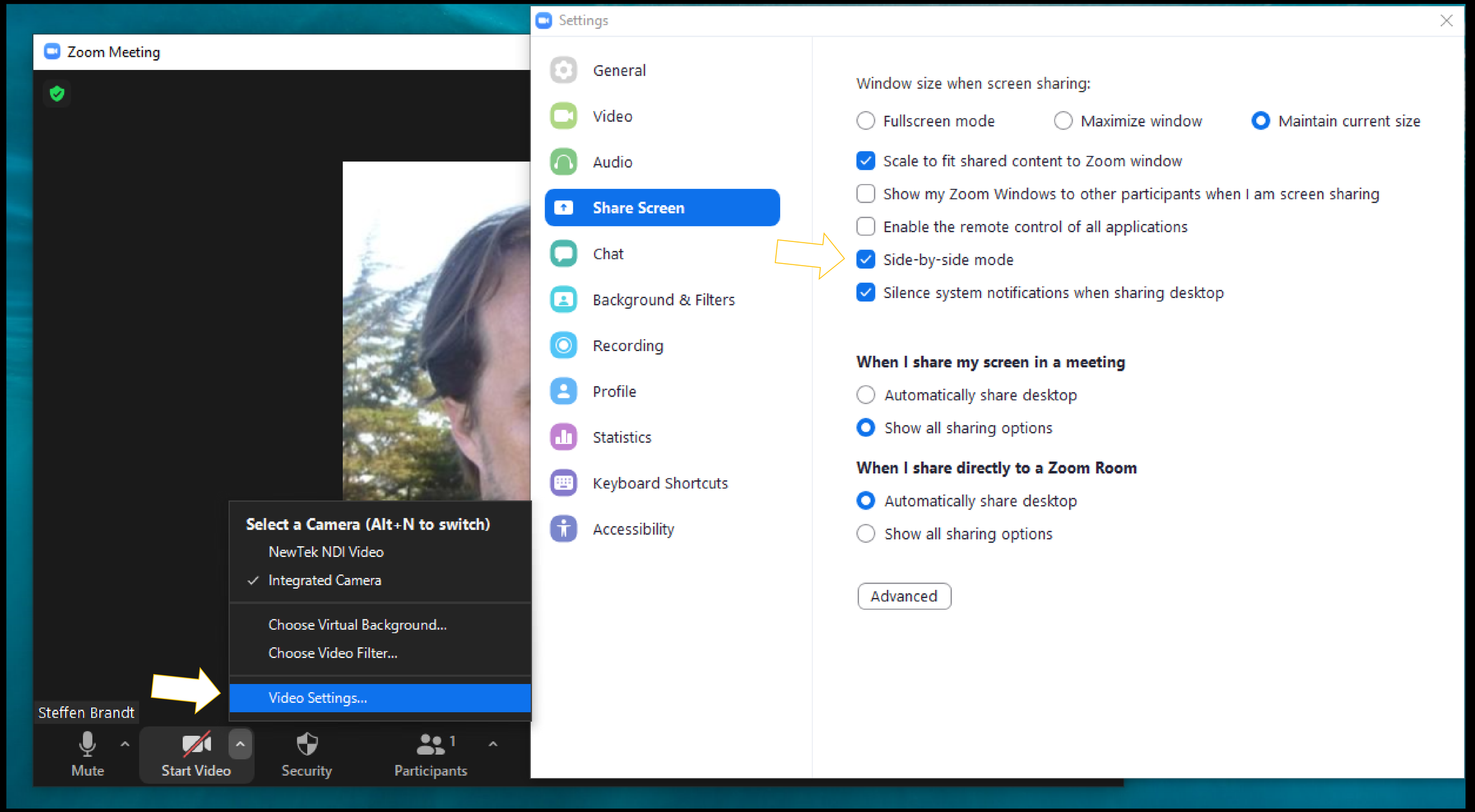
ORGANIZATIONAL MATTERS

- Use your full names in the zoom meetings!
- Scan the QR-Code if you participate in presence
- Complete your profile in the Mattermost chat with your full name and a photo.
- Please write us if you will not go on with the course!

ZOOM

- Try the different viewing modes:
  - Gallery View/ Active Speaker
  - Split Screen/ Full Screen Mode

- Maybe watch this video to get an idea:
  https://www.youtube.com/watch?v=v3IPAbpVjd4


Zoom Meeting
Steffen Brandt
Mute
Start Video
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Participants
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Select a Camera (Alt+N to switch)
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Video Settings...
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Audio
Share Screen
Chat
Background & Filters
Recording
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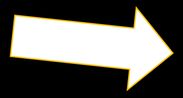
Statistics
Keyboard Shortcuts
Accessibility
Window size when screen sharing:
Fullscreen mode
Maximize window
Maintain current size
Scale to fit shared content to Zoom window
Show my Zoom Windows to other participants when I am screen sharing
Enable the remote control of all applications
Side-by-side mode
Silence system notifications when sharing desktop
When I share my screen in a meeting
Automatically share desktop
Show all sharing options
When I share directly to a Zoom Room
Automatically share desktop
Show all sharing options
Advanced

Definition of the projects and teams



19.04. 16:00	General Introduction
26.04. 16:00	ML Lifecycle Overview and Model Selection
03.05. 16:00	Data Definition and Collection
10.05. 16:00	From Feature Engineering to Data Storage
17.05. 16:00	Advanced Data Processing & Intro into Model Serving
24.05. 16:00	Model Infrastructure & Delivery
31.05. 16:00	Model Monitoring
07.06. 16:00	Project Presentations

CODING.WATERKANT 2023

Beim Coding.Waterkant treffen sich die Machine Learning und KI Enthusiasten aus Schleswig-Holstein und darüber hinaus, um ihre Projekte auf die nächste Stufe zu heben und sich mit anderen auszutauschen – und das alles in der einzigartigen Atmosphäre des Waterkant Festivals.

yourself

KEYFACTS

26. - 30 Juni

2023 findet das Coding.Waterkant statt

4 Tage

lang kannst Du allein oder mit einem Team an Coding.Waterkant teilnehmen

100 Teilnehmer:innen

Werden für Coding.Waterkant 2023 erwartet

Waterkant Gelände

Hier findet das Coding.Waterkant statt

https://coding.waterkant.sh

FIRST BREAKOUT

- 15-20 Minutes
- Present yourself
- Discussion Questions:
  - How would you define the main tasks of MLOps?
  - How does it differ from DevOps?

A CURRENT DEFINITION

MLOps (Machine Learning Operations) is a paradigm, including aspects like

- **best practices,**
- **sets of concepts, as well as a**
- **development culture**

when it comes to

- **the end-to-end conceptualization,**
- **implementation,**
- **monitoring,**
- **deployment, and**
- **Scalability**

of machine learning products.

Kreuzberger, D., Kühl, N., & Hirschl, S. (2023). Machine Learning Operations (MLOps): Overview, Definition, and Architecture. *IEEE Access*, *11*, 31866–31879.

A CURRENT DEFINITION

Most of all, it is an engineering practice that leverages three contributing disciplines:

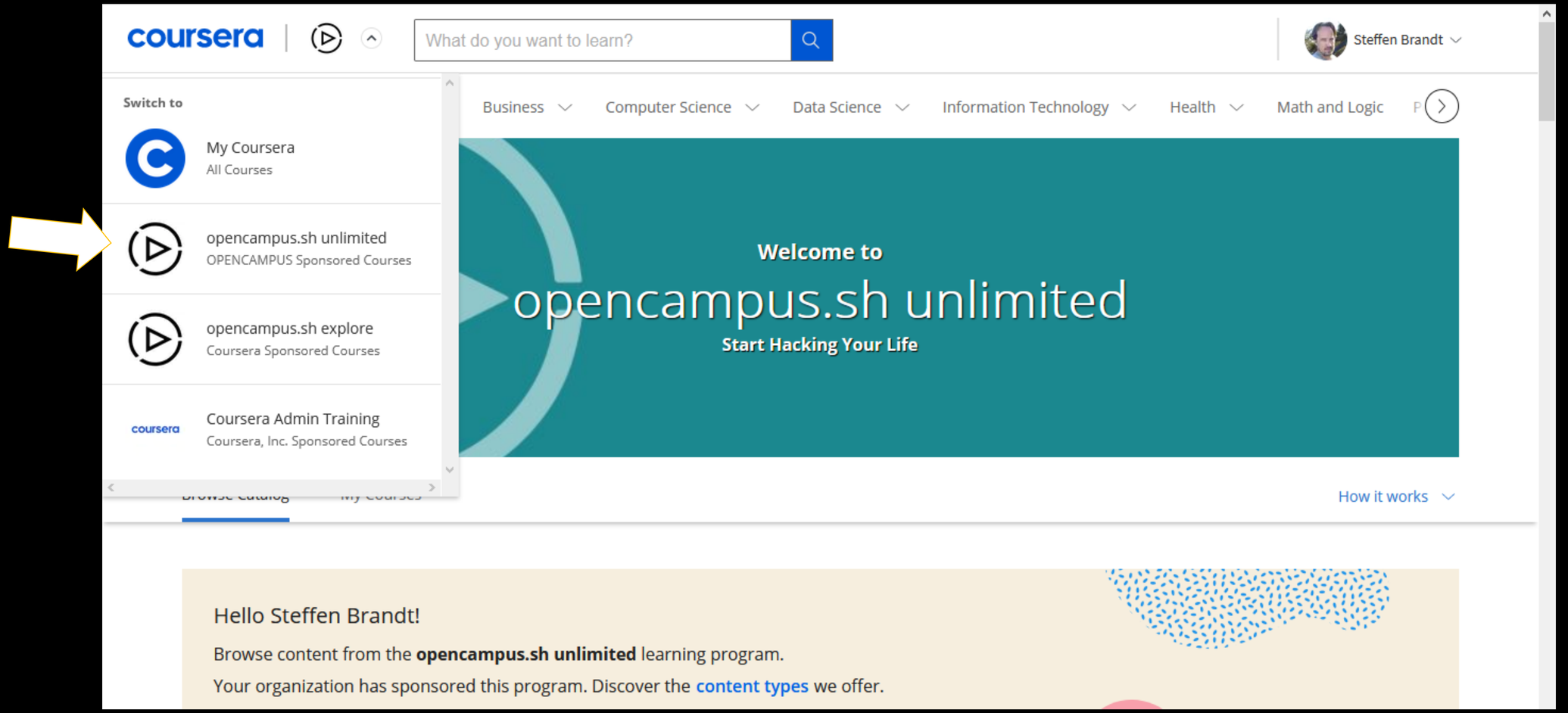
- **machine learning,**
- **software engineering (especially DevOps), and**
- **data engineering.**

MLOps is aimed at productionizing machine learning systems by bridging the gap between development (Dev) and operations (Ops). Essentially, MLOps aims to facilitate the creation of machine learning products by leveraging these principles:

- **CI/CD automation, workflow orchestration, reproducibility;**
- **versioning of data, model, and code;**
- **collaboration; continuous ML training and evaluation;**
- **ML metadata tracking and logging;**
- **continuous monitoring; and**
- **feedback loops.**

Kreuzberger, D., Kühl, N., & Hirschl, S. (2023). Machine Learning Operations (MLOps): Overview, Definition, and Architecture. *IEEE Access*, *11*, 31866–31879.

COURSERA REGISTRATION



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4 COURSE SPECIALIZATION

Machine Learning Engineering for Production (MLOps)

Offered by

DeepLearning.AI

Enroll
Starts Apr 19

Save for Later

Sponsored by OPENCAMPUS

About this Specialization

Understanding machine learning and deep learning concepts is essential, but if you're looking to build an effective AI career, you need production engineering capabilities as well.

Effectively deploying machine learning models requires competencies more commonly found in technical fields such as software engineering and DevOps. Machine learning engineering for production combines the foundational concepts of machine learning with the functional expertise of modern software development and engineering roles.

The Machine Learning Engineering for Production (MLOps) Specialization covers how to conceptualize, build, and maintain integrated systems that continuously operate in production. In striking contrast with standard machine learning modeling, production systems need to handle relentless evolving data. Moreover, the production system must run non-stop at the minimum cost while producing the maximum performance. In this Specialization, you will learn how to use well-established tools and methodologies for doing all of this effectively and efficiently.

Shareable Certificate
Earn a Certificate upon completion

100% online courses
Start instantly and learn at your own schedule.

Flexible Schedule
Set and maintain flexible deadlines.

Advanced Level
Designed for those already in the industry.

COURSE 1

Introduction to Machine Learning in Production

4.8 2,364 ratings

In the first course of Machine Learning Engineering for Production Specialization, you will identify the various components and design an ML production system end-to-end: project scoping, data needs, modeling strategies, and deployment constraints and requ... SHOW ALL

COURSE 2

Machine Learning Data Lifecycle in Production

4.3 632 ratings

In the second course of Machine Learning Engineering for Production Specialization, you will build data pipelines by gathering, cleaning, and validating datasets and assessing data quality; implement feature engineering, transformation, and selection with Ten... SHOW ALL

COURSE 3

Machine Learning Modeling Pipelines in Production

4.4 321 ratings

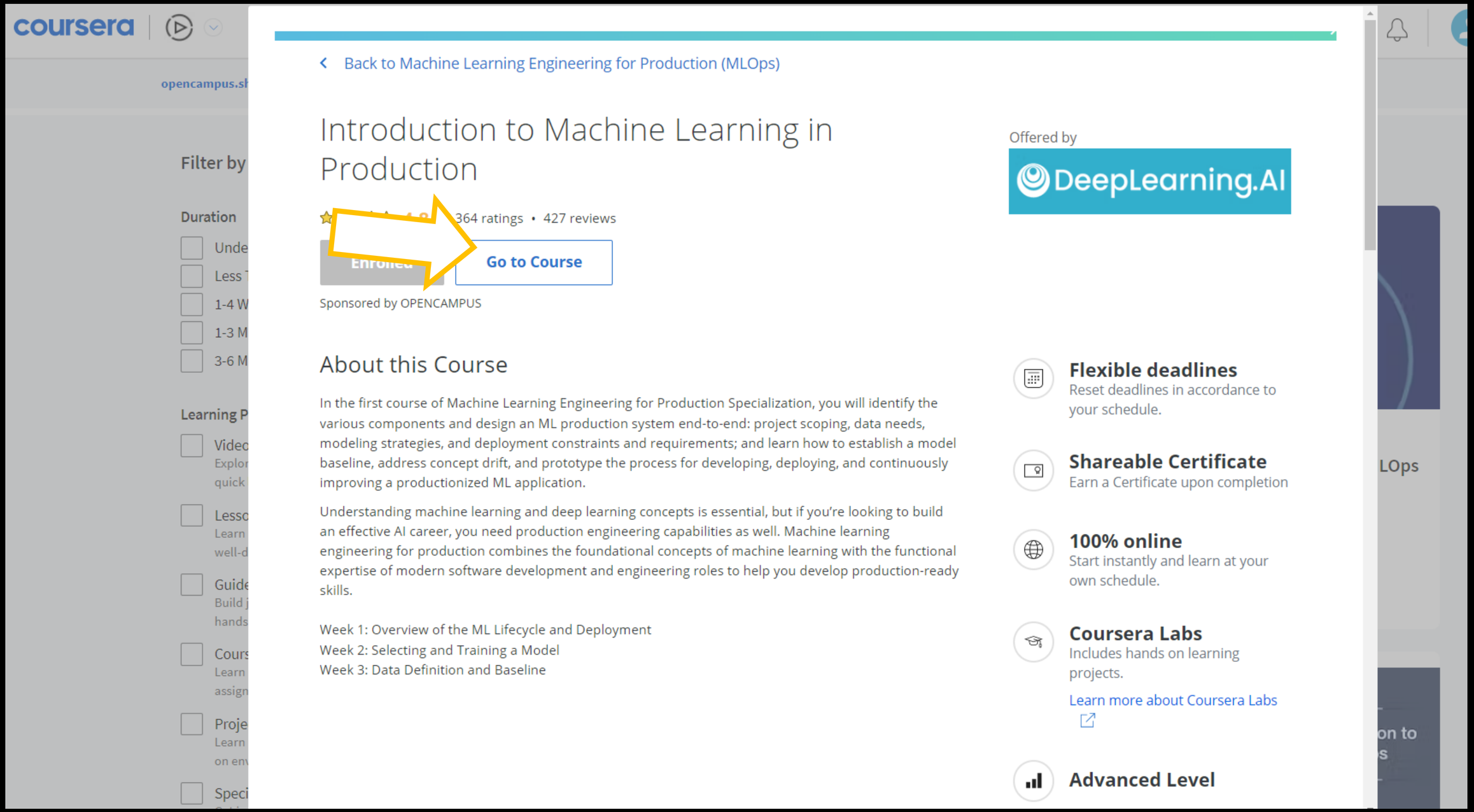
In the third course of Machine Learning Engineering for Production Specialization, you will build models for different serving environments; implement tools and techniques to effectively manage your modeling resources and best serve offline and ... SHOW ALL

COURSE 4

Deploying Machine Learning Models in Production

4.6 247 ratings

In the fourth course of Machine Learning Engineering for Production Specialization, you will learn how to deploy ML models and make them available to end-users. You will build scalable and reliable hardware infrastructure to deliver inference requests both... SHOW ALL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opencampus.sh
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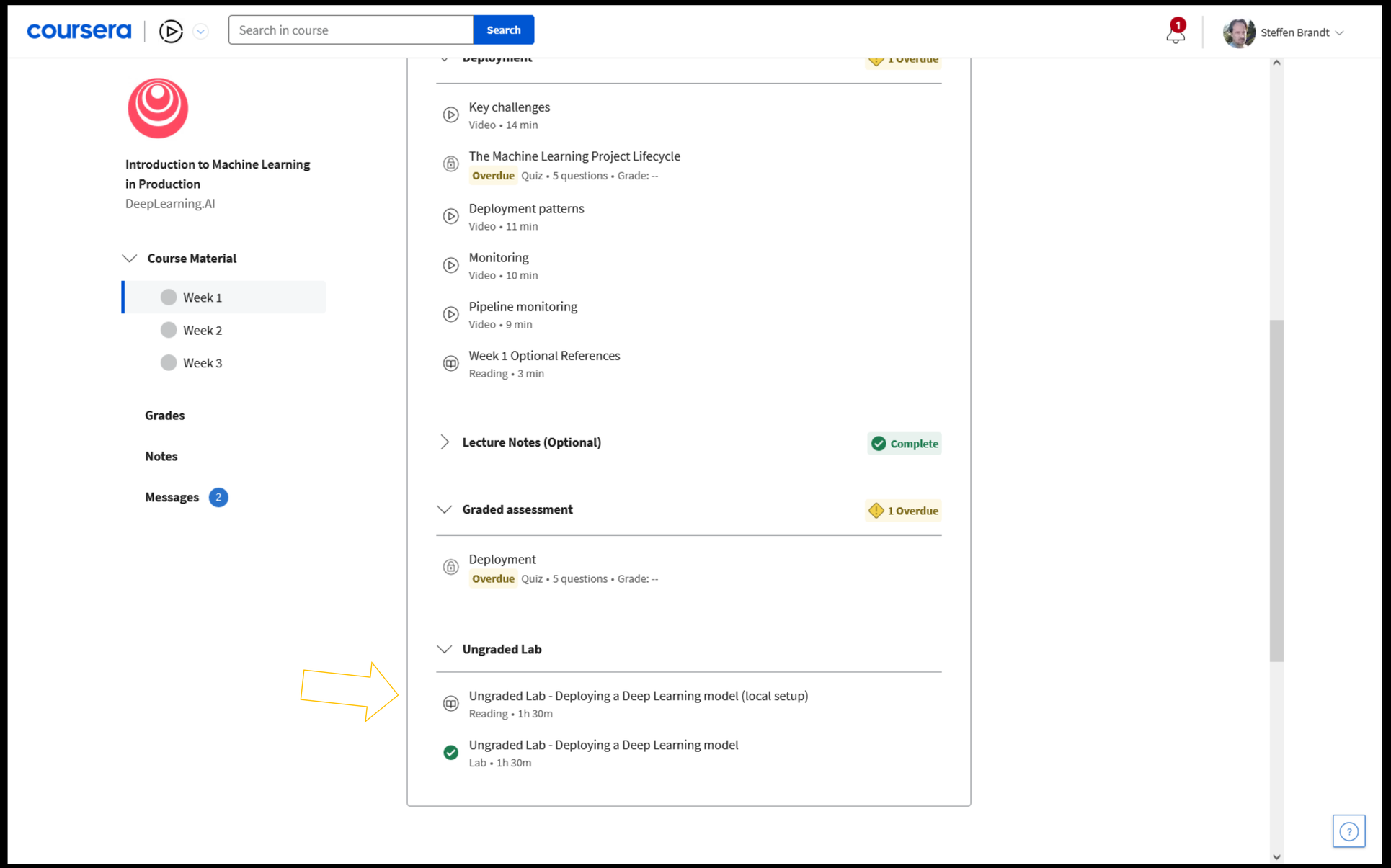
Back to Machine Learning Engineering for Production (MLOps)
Introduction to Machine Learning in Production
364 ratings • 427 reviews
Enrolled
Go to Course
Sponsored by OPENCAMPUS
Offered by
DeepLearning.AI
About this Course
In the first course of Machine Learning Engineering for Production Specialization, you will identify the various components and design an ML production system end-to-end: project scoping, data needs, modeling strategies, and deployment constraints and requirements; and learn how to establish a model baseline, address concept drift, and prototype the process for developing, deploying, and continuously improving a productionized ML application.
Understanding machine learning and deep learning concepts is essential, but if you're looking to build an effective AI career, you need production engineering capabilities as well. Machine learning engineering for production combines the foundational concepts of machine learning with the functional expertise of modern software development and engineering roles to help you develop production-ready skills.
Week 1: Overview of the ML Lifecycle and Deployment
Week 2: Selecting and Training a Model
Week 3: Data Definition and Baseline
Flexible deadlines
Reset deadlines in accordance to your schedule.
Shareable Certificate
Earn a Certificate upon completion
100% online
Start instantly and learn at your own schedule.
Coursera Labs
Includes hands on learning projects.
Learn more about Coursera Labs
Advanced Level

EXERCISES (LABS)



EXERCISES

- Each week at least two of you will present the exercises
- Each of you presents at least once

EXERCISES:
WHO WILL PRESENT NEXT WEEK?

PROJECTS

- Optimal are project teams of two or three participants
- Presentation of the project at the end of the semester
- Upload of the presentation slides and well documented code

Requirements

In order to receive ECTS for a course you have to complete a machine learning project by yourself or preferably in a team with a maximum of 4 participants.

Typically the project work starts in the middle of the course.

The requirement for this semester are:

1. Presentation of a detailed Jupyter Notebook with code and comment
   - including the definition of the environment
   - including required sections (Introduction, Data and Methods, Results, Baseline)
2. A small video, accompanying, for example, a screen recording of the notebook with an explanation of the challenge of the project, the used approach, and the results.
3. A statement that the code is released as open source software.
   The data you use in your project can remain private if you wish.

Details about the requirements of the project will additionally be discussed in the course.

Please ask about whatever may be unclear, preferably before you start the project.

Project Template

Copy link

A way to have consistent structure for all the projects

We created a template folder to help us have a consistent structure for all the projects. This helps us to maintain the projects repository as a database of projects and makes everything easier to check. We are grateful if you can use this template.

You can find the project on Github and clone it

GitHub - opencampus-sh/project_template_folder: A template folder that you can download and fill with th...
GitHub

Or directly download the .zip file here below.

https://github.com/opencampus-sh/project_template_folder/archive/refs/tags/v1.zip

← Projects - Previous **Past Projects**

Next - Additional Resourses **Glossary** →

Last modified 1yr ago

WAS THIS PAGE HELPFUL?

POTENTIAL PROJECTS WITH OPENCAMPUS.SH

- Chatbot for edu.opencampus.sh or opencampus.sh chat

- Application for the Waterkant Festival Exhibition

Hack it with Hasura: Build your own Q&A help bot using GPT-3 & Hasura

In today's world, bots have become an essential tool for businesses to engage with their customers. With the rise of AI technologies, bots have evolved from simple rule-based systems to intelligent conversational agents that can understand natural language and provide personalized responses.

In this live coding webinar, we will show you how to build a Q&A help bot using GPT-3, a powerful language model, and Hasura, a real-time GraphQL API platform.

WEBINAR | **MAR 14, 2023** | **9:30AM PST**

During the webinar, viewers will learn:

- An introduction to GPT-3 and its capabilities for natural language processing
- How to set up a Hasura GraphQL API and integrate it with GPT-3
- How to create a bot that can answer a range of questions on different topics using GPT-3's ability to generate human-like responses
- How to customize the bot's responses to suit your business needs
- How to integrate the bot with your existing systems
- How to leverage GPT-3 and Hasura to build powerful conversational agents that can transform the way you engage with your customers.

VIEW RECORDING

First Name*

Last Name*

Work Email*

Phone Number

Organization*

Title/Position*

How are you using Hasura today?

Select...

Submit

TICKETS MENU

EXHIBITION

Since 2020, the Waterkant exhibition has been bringing together innovative projects and startups from Schleswig-Holstein and beyond from June to the end of September on the MFG5 site to present ideas, impulses, visions and designs for the future to a broad audience. It is time to look for concrete answers and solutions for the challenges of our time and we want to make them visible - no matter how far your project is developed. We are looking forward to round 4 with you!

Call for Participation – Waterkant Exhibition 2023

PROJECT INTERESTS

TASKS UNTIL NEXT WEEK

- Completion of the learning material of week 1 and 2 of the course “Introduction to Machine Learning in Production“
- Complete Exercises 1 and 2 of the above course
- Bring questions!