DeepLearning.AI

Machine Learning in Production

Instructor: Andrew Ng **Top Instructor**

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Starts Nov 19

152,111 already enrolled

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3 modules
Gain insight into a topic and learn the fundamentals.

4.8 ⭐
(3,328 reviews)

Intermediate level
Recommended experience ⓘ

Flexible schedule
1 week at 10 hours a week
Learn at your own pace

👍 **98%**
Most learners liked this course

What you'll learn

✓ Identify key components of the ML project lifecycle, pipeline & select the best deployment & monitoring patterns for different production scenarios.

✓ Optimize model performance and metrics by prioritizing disproportionately important examples that represent key slices of a dataset.

✓ Solve production challenges regarding structured, unstructured, small, and big data, how label consistency is essential, and how you can improve it.

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Application Deployment   Machine Learning   Continuous Monitoring   Feature Engineering

Software Development Life Cycle   Data Validation   Data Quality

MLOps (Machine Learning Operations)   **View all skills**

Details to know

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There are 3 modules in this course

In this Machine Learning in Production course, you will build intuition about designing a production ML system end-to-end: project scoping, data needs, modeling strategies, and deployment patterns and technologies. You will learn strategies for addressing common challenges in production like establishing a model baseline, addressing concept drift, and performing error analysis. You'll follow a framework for developing, deploying, and continuously improving a productionized ML

Machine learning engineering for production combines the foundational concepts of machine learning with the skills and best practices of modern software development necessary to successfully deploy and maintain ML systems in real-world environments.

Week 1: Overview of the ML Lifecycle and Deployment
Week 2: Modeling Challenges and Strategies
Week 3: Data Definition and Baseline

Read less

Week 1: Overview of the ML Lifecycle and Depl…

Module 1 • 3 hours to complete

Module details ⌃

This week covers a quick introduction to machine learning production systems focusing on their requirements and challenges. Next, the week focuses on deploying production systems and what is needed to do so robustly while facing constantly changing data.

What's included

▶ 8 videos   📖 3 readings   📋 2 assignments   ⤵ 1 app item

▦ 2 ungraded labs

Show info about module content ⌄

Week 2: Modeling Challenges and Strategies

Module 2 • 3 hours to complete

Module details ⌃

This week is about model strategies and key challenges in model development. It covers error analysis and strategies to work with different data types. It also addresses how to cope with class imbalance and highly skewed data sets.

What's included

▶ 16 videos 📖 2 readings 📋 2 assignments 🗔 1 ungraded lab

Show info about module content ⌄

This week is all about working with different data types and ensuring label consistency for classification problems. This leads to establishing a performance baseline for your model and discussing strategies to improve it given your time and resources constraints. This week also includes the final end-to-end project.

What's included

▶ 17 videos 📖 5 readings 📋 2 assignments 🗔 2 ungraded labs

Show info about module content ⌄

Instructor

Instructor ratings ⓘ **4.9** ⭐ (1,069 ratings)

Top Instructor

Andrew Ng
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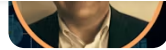
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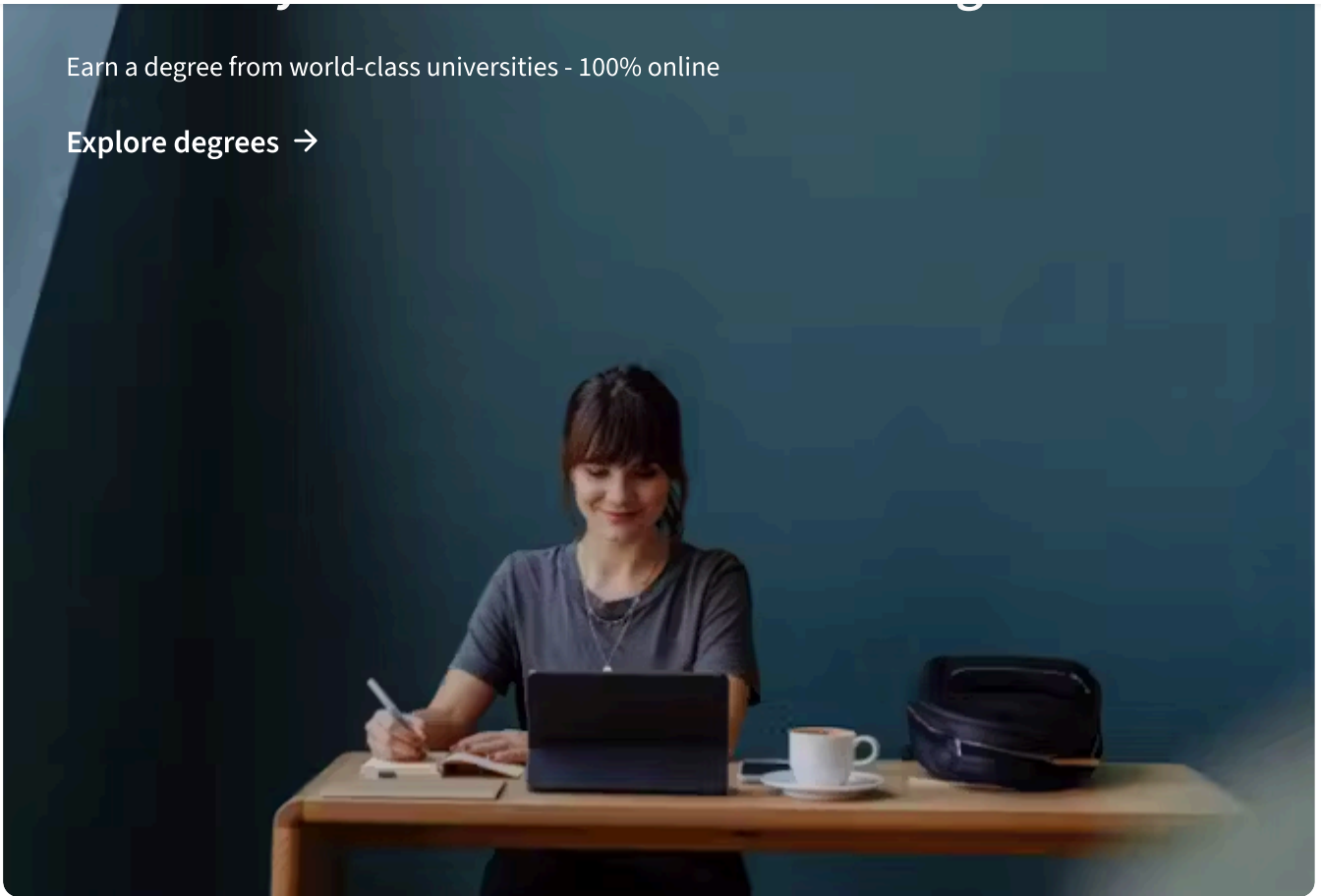
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Frequently asked questions

˄   What is machine learning engineering for production? Why is it relevant?

Machine learning engineering for production refers to the tools, techniques, and practical experiences that transform theoretical ML knowledge into a production-ready skillset.

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.

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. With machine learning engineering for production, you can turn your knowledge of machine learning into production-ready skills.

˅   What is the Machine Learning in Production Course about?

˄   What will I be able to do after completing the Machine Learning in Production course?

By the end, you will be ready to:

Design an ML production system end-to-end: project scoping, data needs, modeling strategies, and deployment requirements.

Establish a model baseline, address concept drift, and prototype how to develop, deploy, and continuously improve a productionized ML application.

Build data pipelines by gathering, cleaning, and validating datasets.

follow data evolution with enterprise data schemas.

Apply techniques to manage modeling resources and best serve offline/online inference requests.

Use analytics to address model fairness, explainability issues, and mitigate bottlenecks.

Deliver deployment pipelines for model serving that require different infrastructures.

Apply best practices and progressive delivery techniques to maintain a continuously operating production system.

> ⌄ **What background knowledge is necessary for the Machine Learning in Production course?**

> ⌄ **What will I learn in the Machine Learning in Production course?**

> ⌄ **Who is the Machine Learning in Production course for?**

> ⌄ **How long does it take to complete the Machine Learning in Production course?**

> ⌄ **Who is the Machine Learning in Production course by?**

> ⌄ **Is this a standalone course or a Specialization?**

> ⌄ **How do I get a receipt to get this reimbursed by my employer?**

> ⌄ **I want to purchase this course for my employees. How can I do that?**

∨ Will I earn university credit for completing the Specialization?

∨ Will I receive a certificate at the end of the Specialization?

∨ What will I get if I subscribe to this Specialization?

∨ Is financial aid available?

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⊘ **More questions**

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