Welcome to Machine Learning/AI Engineering Foundations!

Build the foundation you need to be successful in the Machine Learning/AI Engineer Career Path!

Machine Learning/AI Engineering is at the forefront of some of the most exciting technologies being developed today. From fraud detection systems to dating apps, machine learning engineering is changing the world.

Joining this movement and becoming a Machine Learning Engineer requires a solid foundation in data literacy, programming, mathematics, statistics, and visualization. This Skill Path is that foundation.

If you are just getting started, need a refresher, or want to fill in the gaps of your knowledge, this Skill Path will take you through all of the essential knowledge and skills you need to be successful on your journey to becoming a Machine Learning or AI Engineer.

This Skill Path is designed to be followed by our Machine Learning/AI Engineer Career Path, but you can also use it to get started in any data profession role while you keep building your skills.

What will you learn?

In this Skill Path, you will develop the knowledge and skills you need to work with data confidently. It is a comprehensive introduction the programming, mathematical, statistical, and communication skills that are at the center of data science.

After this course, you will be able to:

- articulate what can go right and what can go wrong when working with data.
- write basic programs to create custom analyses with Python
- use the Pandas library for Python to manage and manipulate data
- clean data to prepare it for analysis
- contextualize machine learning algorithms with their mathematical underpinnings
- leverage statistics to build better models
- create data visualizations that communicate your results

Why did we make this?

We built this skill path to guide you through the foundations you need to be successful in the Machine Learning/AI Engineer Career Path. We have studied the data, and worked with machine learning engineers, data engineers, managers, and professors to identify which skills are the most essential to master first.

What should you know before starting this course?

This Skill Path assumes that you have no prior experience working with data or programming (though it does assume interest and curiosity).

What will you create?

Throughout this course, you will be tasked with applying the concepts learned in projects. Here is a preview of the projects featured in this course:

Here's a preview of the Portfolio Projects featured in this Path:

U.S. Medical Insurance Costs

- Use Python to analyze a dataset of U.S. medical insurance costs.

Life Expectancy and GDP

- Analyze, prepare, and plot data about GDP and life expectancy from the World Health Organization.

You will also practice your new skills with Challenge Projects and start building a Portfolio of projects to demonstrate your new skills. You can complete the Portfolio Projects either in parallel with or after taking the prerequisite content—it's up to you!

Where do I find other Machine Learning/AI Engineering students??

The Forums!

Learning is social. Whatever you're working on, be sure to connect with the Codecademy community in the forums. Remember to check in with the community regularly, including for things like asking for code reviews on your project work and providing code reviews to others in the projects category, which can help to reinforce what you've learned.

We are excited for you to start your journey!