Module Three Introduction

Module Three

Learning Objectives

By the end of this module, you will meet these learning objectives:

- Analyze the ethical and legal impacts of artificial intelligence
- Evaluate the use of Advanced Neural Networks (ANN) to solve programming problems

Module Overview

This week, you will be implementing convolutional networks in Keras. You will also consider the ethical and legal implications of deep learning and artificial intelligence (AI) in general. Convolutional neural networks (CNNs) are deep learning algorithms that are typically used for image processing. CNNs process images as tensors, which are multidimensional matrices that work by applying filters to the images. The advantage of this approach is that it requires minimal preprocessing. In the industry, CNNs are widely used in facial recognition and image processing that requires classification.

Additionally, you will be asked to consider the legal and ethical implications of AI in preparation for Project One. This module contains a number of readings on bias, privacy, and ethics. Legal and ethical implications are important to consider within any field, but are especially important when developing different programs and applications. Technological developments can quickly become a part of everyday life, with wide-ranging impacts. AI programs and algorithms can add an extra layer of complication to the ethical concerns. For example, they may be trained with data sets containing inherent biases, or we may not be able to understand how the AI behind a program is making decisions at all! Thus, it is incredibly important to make sure that you, as a developer, consider the ethical and legal implications of the technologies you develop. Both this week's assignment and discussion ask you to consider these topics.

In the discussion, you will consider the role that hidden bias plays in AI and its ethical implications. For the assignment, you will be asked to copy and run the CIFAR-10 code from your textbook, which will classify different images. This will allow you to see a Keras CNN implementation in action! In addition to running the code, you will be asked to consider the ethical implications of this type of technology. Image classification is a part of many social media platforms and image hosting websites: You likely use technologies with this capability in your day-to-day life!

Finally, be sure to spend some time this week working on Project One, which will be due in the

next module. The project is labor-intensive, so it is essential that you begin working on it this week, if you have not already!

Module at a Glance

This is the recommended plan for completing the reading assignments and activities within the module. Additional information can be found in the module Resources section and on the module table of contents page.

1. Review the Module Three resources.
2. Post your initial response to this week's discussion.
3. Complete the Module Three assignment.
4. Review the Project One reminder.
5. Post peer responses to the discussion.

Activity Details

You have viewed this topic

Read this introduction to learn what you'll be working on in this module.

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