Aprendizagem Automática > Semana 2 > Access to MATLAB Online and the Exercise Files for Matlab Online Inc.

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Access to MATLAB Online and the Exercise Files for MATLAB Users

Access to MATLAB Online

A MATLAB Online trial license has been provided by MathWorks to Machine Learning students for the duration of the course. MATLAB Online is the online version of the MATLAB desktop program. It provides most features of the original program in a web-based interface. No download or installation is required, and the program can be accessed from any computer running a common web browser.

Follow the steps below to access MATLAB Online

- 1. If you do not already have one, create a MathWorks account.
- 2. Click on the MATLAB Online license link and provide your MathWorks account credentials (if requested).
- Click on the blue 'Access MATLAB Online' button, and log-in to MATLAB Online with your MathWorks account credentials (if requested).
- 4. Follow the instructions below to upload the exercise files for MATLAB users.

For help with MATLAB Online access or technical issues, see the **MATLAB Help** discussion forum. Bookmark https://matlab.mathworks.com/ for quicker access to MATLAB Online in the future.

Download the Exercise Files for MATLAB Users

The original programming exercise files <u>cannot be used with MATLAB Online or Desktop beginning with version R2019b.</u> The files below have been updated specifically for MATLAB users running R2018b or later. Octave users and MATLAB Desktop users running earlier versions of MATLAB should use the files provided later in the course.

Download the zip file:

Download the zip file to your desktop using the link below and rename the file to: **machine-learning-ex**. Note that Coursera adds extra characters to the filename upon download that must be removed.

machine-learning-ex.zip

MATLAB Desktop users can download the zip file to the location of their choice and unzip the files. MATLAB Online users should follow the additional steps below.

Add the files to MATLAB Online:

- 1. Open MATLAB Online and click the 'Upload' button in the 'Home' tab.
- Use the browser to select the 'machine-learning-ex.zip' file, then click 'Open'. You should see the file in the Current Folder window in MATLAB Online after upload is complete.
- 3. Unzip the file by entering the command: unzip machine-learning-ex.zip at the command line.

If you experience issues uploading the zip file, try using <u>MATLAB Drive</u> instead. You can also access all of your MATLAB Online files through MATLAB Drive, even after your MATLAB license has expired.

Completing the programming exercises using MATLAB

The programming exercise files above have been updated specifically for MATLAB users. These files differ from the original Octave exercise files. Note that the homework assignment demonstration provided by professor Ng later in Week 2 applies only to the original exercise files.

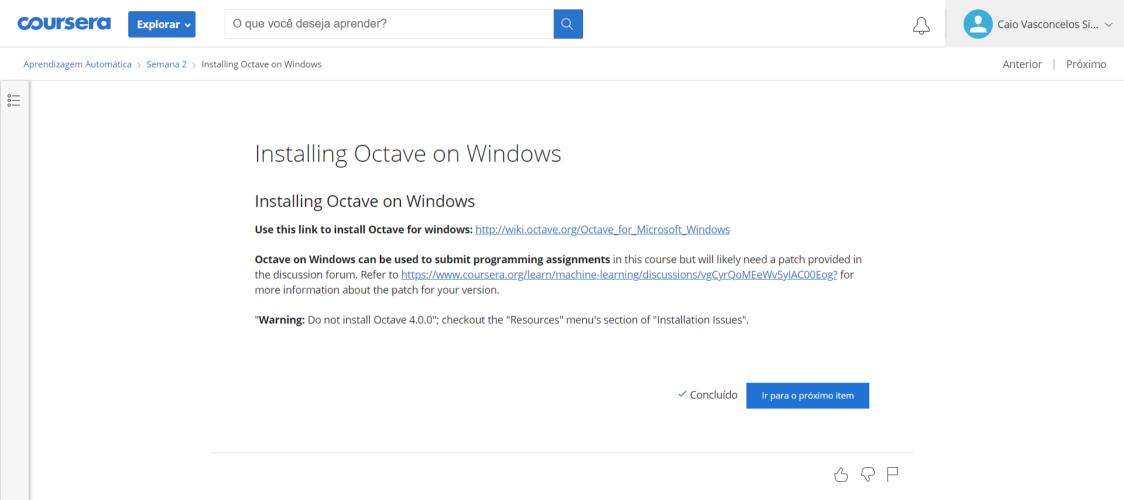
To successfully complete the programming exercises using the updated files, follow the instructions below:

- 1. When you reach the first programming exercise page (at the end of Week 2), **DO NOT** download the exercise files. The files for *all* programming exercises are already included in the zip file above.
- 2. **DO** record the assignment token provided on the exercise page, you will need it to submit your solutions.
- DO read the instructions for MATLAB users provided in the README file which will guide you through the process of completing the exercises using MATLAB.
- 4. **DO** check the **README** file first for tips and solutions to common problems with the updated files if you experience any issues.

The other programming exercises for later weeks should be completed in a similar fashion.

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More Octave/MATLAB resources

Octave Resources

At the Octave command line, typing **help** followed by a function name displays documentation for a built-in function. For example, help plot will bring up help information for plotting. Further documentation can be found at the Octave documentation pages.

MATLAB Resources

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Introduction to MATLAB with Onramp

Made for MATLAB beginners or those looking for a quick refresh, the MATLAB Onramp is a 1-2 hour interactive introduction to the basics of MATLAB programming. Octave users are also welcome to use Onramp (requires creation of a free MathWorks account). To access Onramp:

- 1. If you don't already have one, create a MathWorks account at: https://www.mathworks.com/mwaccount/register
- 2. Go to: https://matlabacademy.mathworks.com/ and click on the MATLAB Onramp button to start learning MATLAB!

MATLAB Programming Tutorials

These short tutorial videos introduce MATLAB and cover various programming topics used in the assignments. Feel free to watch some now and return to reference them as you work through the programming assignments. Many of the topics below are also covered in MATLAB Onramp, *Indicates content covered in Onramp.

Get Started with MATLAB and MATLAB Online

- What is MATLAB?*
- MATLAR Variables*
- MATLAB as a Calculator^a
- Getting Started with MATLAB Online
- Managing Files in MATLAB Online

Vectors

- Creating Vectors*
- Creating Uniformly Spaced Vectors*
- Accessing Elements of a Vector Using Conditions*
- Calculations with Vectors*
- Vector Transpose

Visualization

- Line Plots*
- Annotating Graphs*
- Multiple Plots*

Matrices

- Creating Matrices*
- Calculations with Matrices*
- Accessing Elements of a Matrix*
- Matrix Creation Functions*
- Combining Matrices
- Determining Array Size and Length
- Matrix Multiplication
- Reshaping Arrays
- Statistical Functions with Matrices

MATLAB Programming

- Logical Variables*
- If-Else Statements*
- Writing a FOR loop* Writing a WHILE Loop
- Writing Functions
- Passing Functions as Inputs

Troubleshooting

- Using Online Documentation*
- Which File or Variable Am I Using?
- Troubleshooting Code with the Debugger

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Setting Up Your Programming Assignment Environment

The Machine Learning course includes several programming assignments which you'll need to finish to complete the course. The assignments require the Octave or MATLAB scientific computing languages.

- Octave is a free, open-source application available for many platforms. It has a text interface and an experimental graphical one.
- MATLAB is proprietary software, but a free trial license to MATLAB Online is being offered for the completion of this course.

FAQ

Does it cost money?

While you're taking the course, both software packages are available free of charge. Octave is distributed under the GNU Public License, which means that it is always free to download and distribute. MATLAB Online licenses are available for completing the programming assignments in the course only. For any other purposes (like your own work after you complete the course), MATLAB can be licensed to <u>individuals</u> or companies from Mathworks directly.

Is there a difference in quality?

There are several subtle differences between the two software packages. MATLAB may offer a smoother experience (especially for Mac users), contains a larger number of functions, and can be more robust to failure. However, the functions used in this course are available in both packages, and many students have successfully completed the course using either.

How do I install one of them?

To install Octave, see installation instructions for <u>Windows</u>, <u>Mac OS X (10.10 Yosemite and 10.9 Mavericks</u>), <u>other Mac OS X</u>, or <u>GNU/Linux</u>. Instructions for

- Accessing the free MATLAB Online trial
- Downloading the exercise files for MATLAB Online and newer versions of MATLAB desktop

are found in the next section.

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