

Computational Tools for Macroeconomics using MATLAB

Week 12 – Recap & final project

Cristiano Cantore

Sapienza University of Rome

AI can help you learn—or help you avoid learning

AI can be an excellent learning tool, but it can also be disaster. Suppose you wanted to learn to play the piano, and you've signed up for an online course. The teacher tells you that the homework for next week is to learn the C major scale, record yourself, and upload the audio file.

(Provided passage)

The “good” use: AI as a tutor

There are two ways to do this. In the first, you ask AI to explain the C major scale. The notes involved, and the logic. Then perhaps you ask where those notes are on the piano, and you receive accurate and excellent instructions.

(Provided passage)

- ▶ Use AI for **explanations, concepts, and feedback cues**
- ▶ Keep the **human work** (practice, checking, repetition) on you

What learning looks like

You practice many hours, going back to the AI output, and verify you are doing things correctly. After a while you record yourself and upload the audio file. You really learnt the scale. It's muscle memory now.

(Provided passage)

Key idea

AI can *reduce friction* in understanding—it cannot *replace* the repetitions that create skill.

Why this is powerful

This is a great way of using AI for learning. It speeds things up tremendously compared to just a few years ago.

(Provided passage)

- ▶ Faster clarification of basics
- ▶ More immediate guidance when you get stuck
- ▶ More time spent on deliberate practice

The “bad” use: outsourcing the work

But, second, there is a bad way of using AI too. Suppose you instead prompt it to ‘make a recording of someone playing the c major scale on the piano, and provide me with the audio file. Make it sound real!

(Provided passage)

Warning

If AI does the **performance** for you, you may still get the submission—but you lose the learning.

The consequence

Students using the first approach will be a skilled pianist when the year is over. The students using the second will be as bad as when they first started. You decide which one you want to be.

(Provided passage)

Takeaway

Use AI to **support practice**, not to **substitute** for practice.

Exams

- ▶ Type 1: Just come to the exam to certify it. Still have to book it on infostud.
- ▶ Type 2: Submitted all courseworks but not enough attendance. Need to come to the exam and comment on your submitted homeworks.
- ▶ Type 3: Not enough homework submissions. Need to prepare a project and come to the exam to discuss it.