

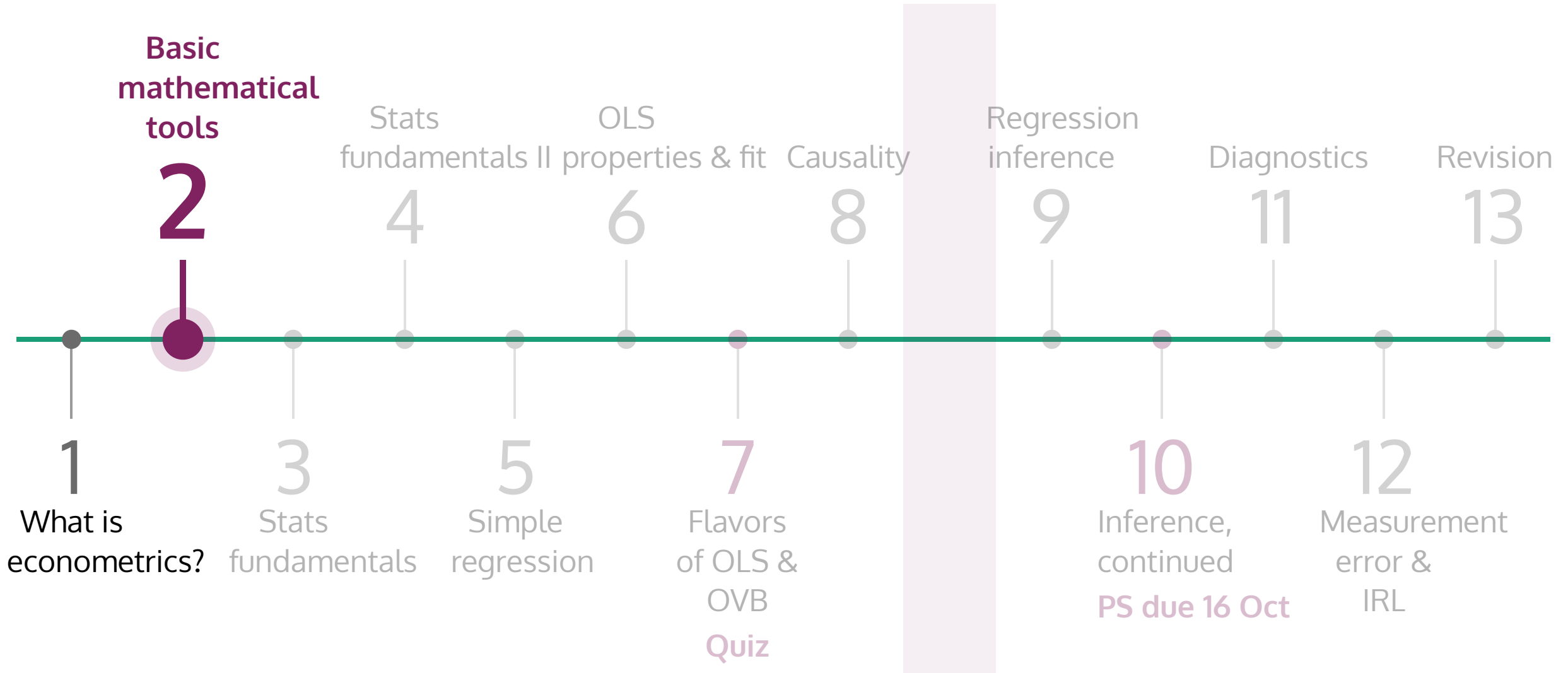
A vibrant explosion of pink, orange, and blue powder against a black background. The powder is captured in mid-air, creating a starburst effect with various streaks and clouds of color radiating from a central point. The colors are bright and saturated, contrasting sharply with the dark background.

ECON 2041

Introductory Econometrics

Get using Python

Plan for the semester



Plan for today

- Why you should learn to code
- What is Python & why are we using it?
- Setting up Google Colab
- Python basics

The elephant in the (class)room

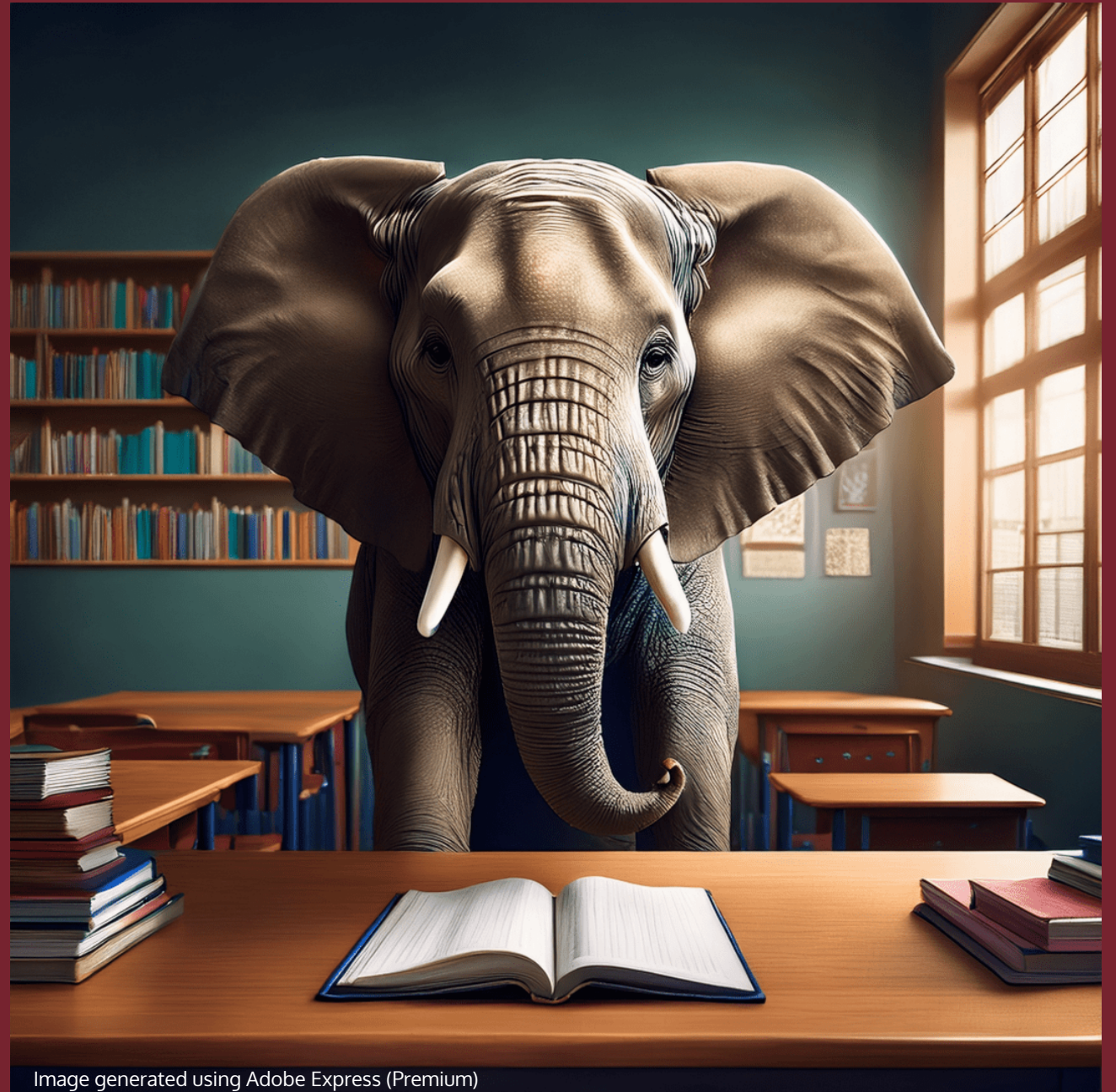
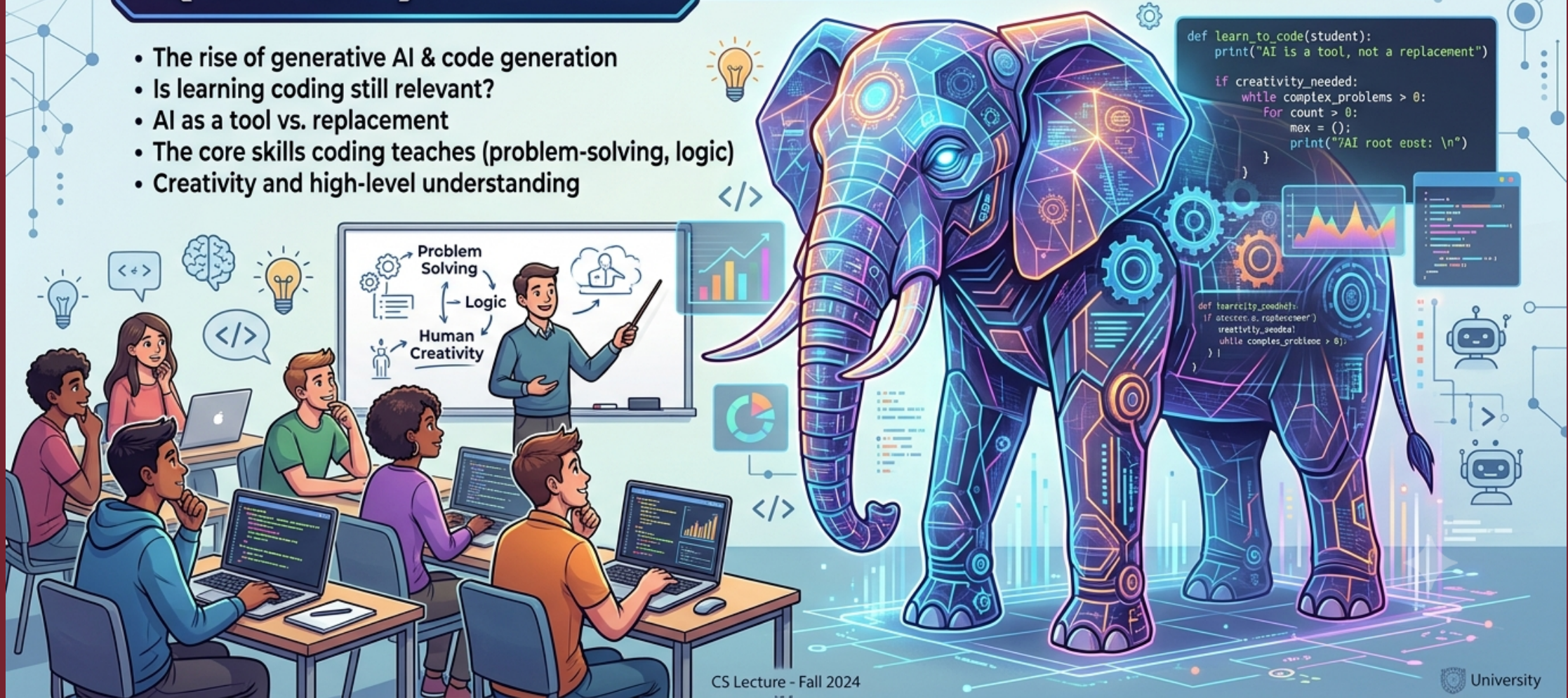


Image generated using Adobe Express (Premium)
Prompt: elephant in the classroom

'ELEPHANT IN THE (CLASS)ROOM'

ABOUT AI AND WHY STUDENTS SHOULD STILL LEARN TO CODE

- The rise of generative AI & code generation
- Is learning coding still relevant?
- AI as a tool vs. replacement
- The core skills coding teaches (problem-solving, logic)
- Creativity and high-level understanding



The Effects of Climate Change

- Global temperature increase
 - sea level rise
- More extreme weather events
- Loss of biodiversity and habitat
- Impacts on agriculture and food security
- Human health consequences
- Migration and displacement

How can we mitigate these effects?

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- More extreme weather events
- Loss of biodiversity and habitat
- Impacts on agriculture and food security
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How can we mitigate these effects?



What's your background?

Quick survey on your background & interests

1. Open your portal link
<https://emiliatjernstrom.com/econ2041/portal.html>

OR scan the QR code, then enter your code

2. Answer the five questions and hit Submit

Portal answers are anonymous & ungraded



Why you should still learn to code

... even though AI can (sort of) do it for you

Coding builds core **transferable** skills

- teaches problem solving
- sharpens logic & structure
- trains you to check & debug

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AI can't replace understanding

- AI guesses but you still need to judge
- bad code may still run
- without knowing the basics you can't fix errors

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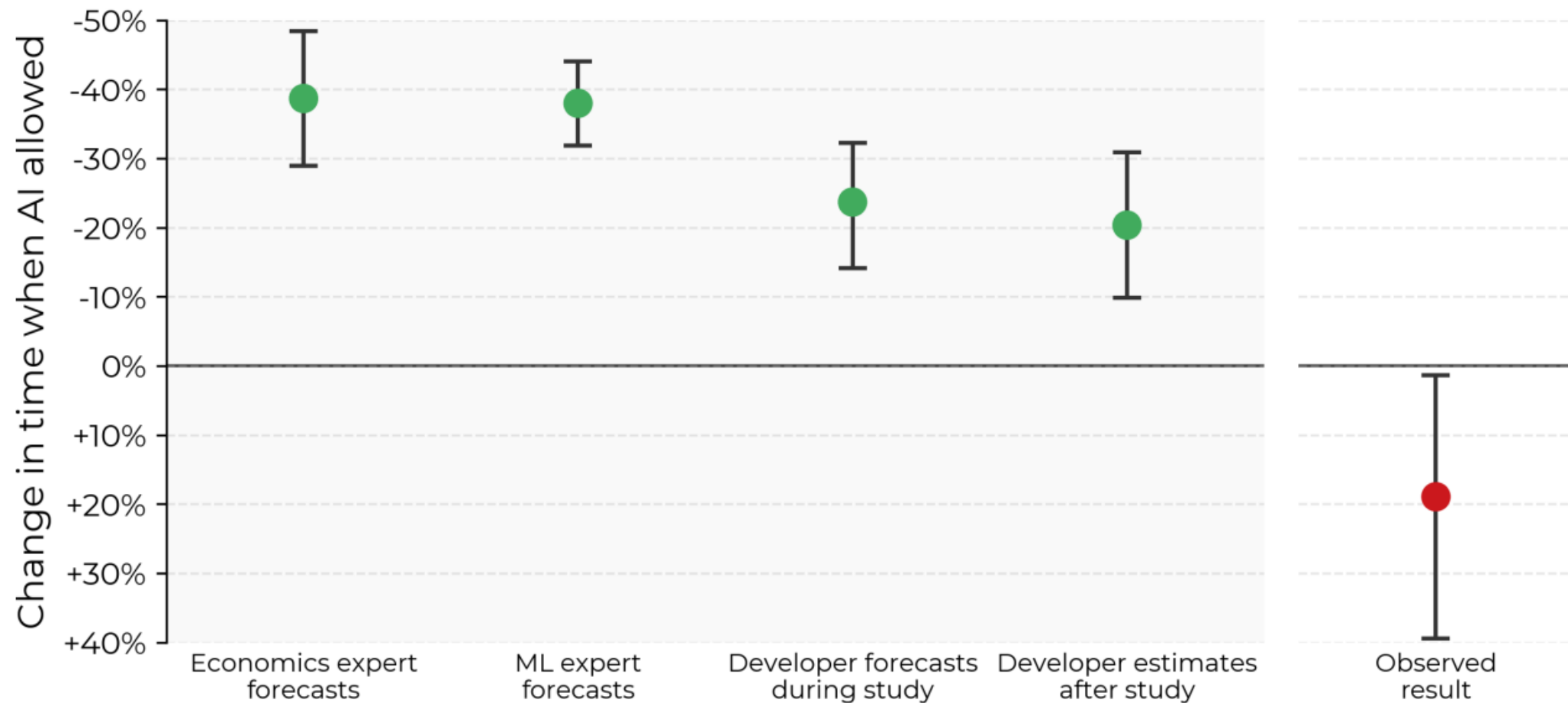
Coding makes you stand out

- signals technical fluency
- shows initiative & curiosity
- you will do more than peers who rely on AI

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Experts and Study Participants Misjudge AI Speedup



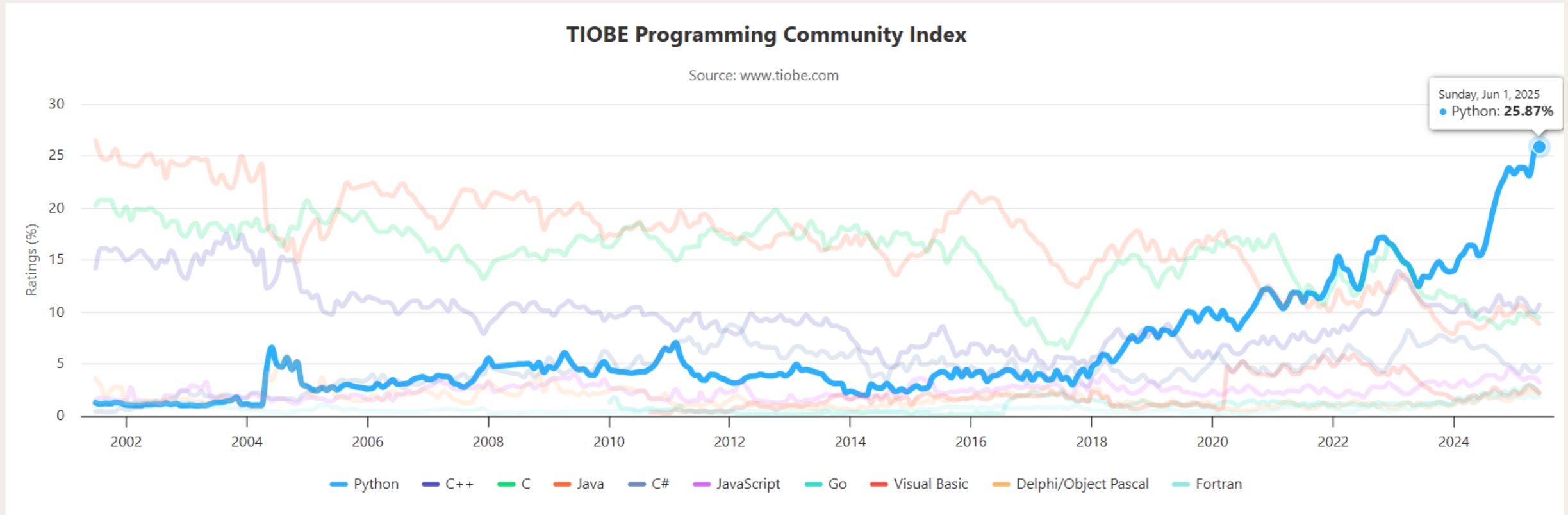
What is Python?

Python!

We'll use Python & Jupyter notebooks for our econometric data work

Python is...

one of the most popular programming languages



Python!

We'll use Python & Jupyter notebooks for our econometric data work

Python is... a free & open-source general-purpose programming language

used **for**

- AI
- scientific computing
- communication
- web development
- CGI and graphical user interfaces
- game development
- etc.

Python!

We'll use Python & Jupyter notebooks for our econometric data work

Python is... a free & open-source general-purpose programming language

used **by**

- Google
- OpenAI
- Netflix
- Meta
- Dropbox
- Amazon
- Reddit
- etc.

Jupyter notebooks

We'll use Python & Jupyter notebooks for our econometric data work

Jupyter notebooks: one of the many ways of interacting with Python

They let you use your browser to

- write & execute Python commands
- format output, including tables, figures, animations, etc.
- combine text, mathematical expressions, and code

Jupyter notebooks

We'll use Python & Jupyter notebooks for our econometric data work

Jupyter notebooks: one of the many ways of interacting with Python

Jupyter isn't the only way to code in Python, but it's GREAT for

- getting started coding in Python
- testing new ideas
- interacting with small pieces of code
- using online interactive environments such as Google Colab
- sharing / collaborating on research

We work in Colab

Everything in this unit runs in **Google Colab**,
in your browser

- nothing to install
- works on any machine you sit at
- your work saves to your Google Drive



Google Colab

Colab allows you to run Python (in a Jupyter notebook) on a Google-provided remote cloud computer

Amazingly, this is free but it does require a Google account

One cool feature of this is that you can run it from your smartphone

Over to the notebook

Open this week's lecture notebook and follow along:

<https://emiliatjernstrom.com/econ2041/lectures/w02>

It will open directly in Colab

Click **Copy to Drive** first, so your edits save

Now you know...

- How to open and run a Jupyter notebook
- How to get Python to print something for you
- How to use Python as a calculator

I hope you're excited about applying these skills and building on them!