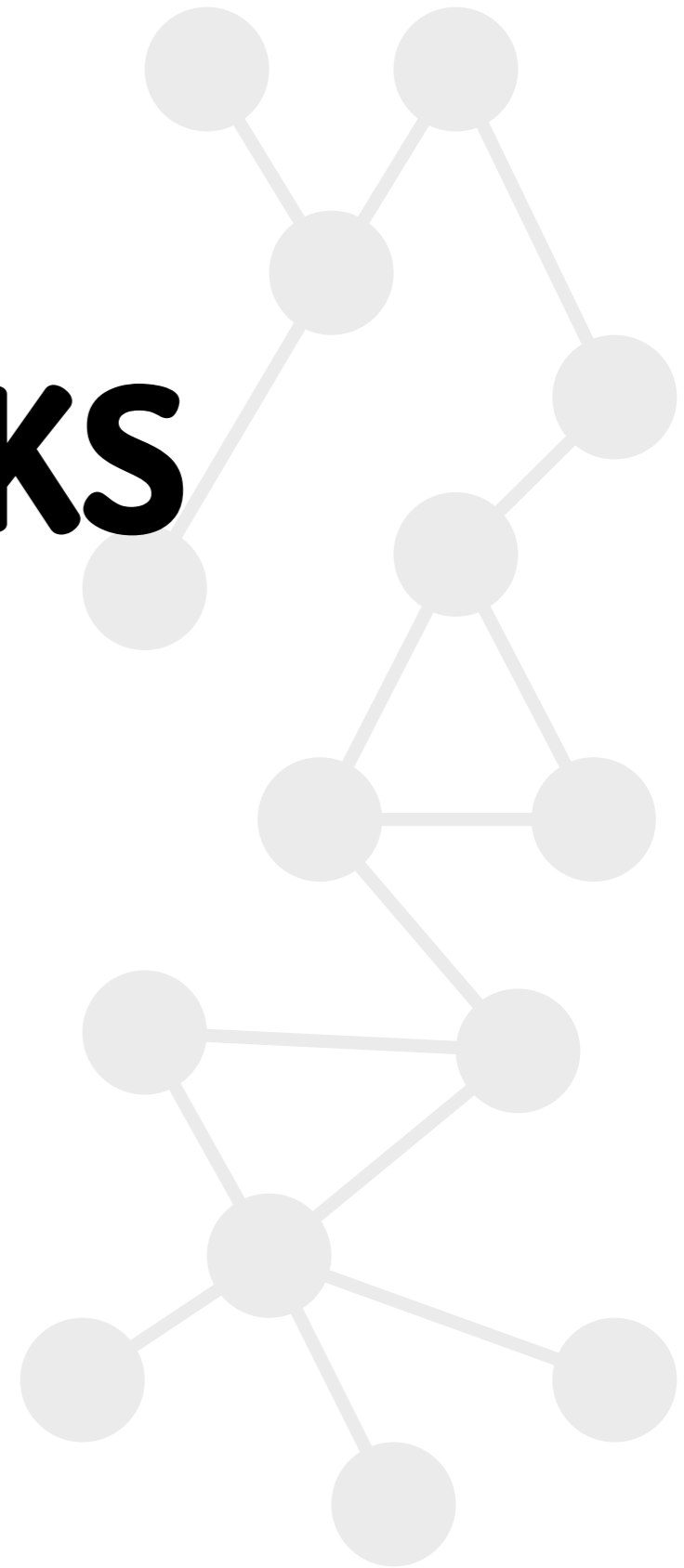


FINANCIAL NETWORKS



THE UNIVERSITY
of EDINBURGH

ACADEMIC YEAR 2025/2026



TEAM

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MATERIAL AND INFO

LEARN ULTRA

<https://opencourse.inf.ed.ac.uk/finet>



TUTORIALS

Weekly tutorials from week 3 - **in person**

Students are expected to attempt the exercises
before attending the tutorial



COURSEWORK

One assignment (50% of final marks)

Assignment issued on week 3 or 4, deadline week 11

Exact dates will be available on the websites



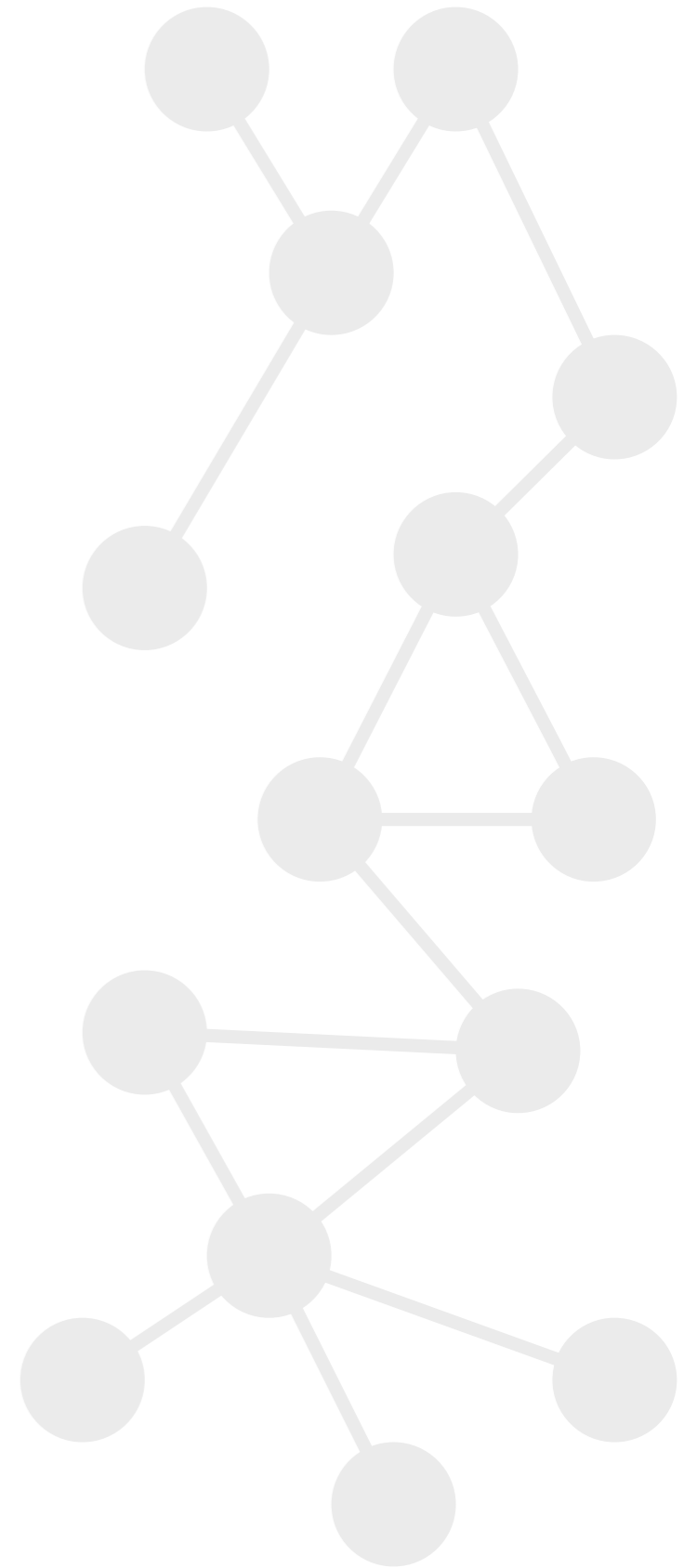
EXAM

50% of final marks

Exam diet: december

Resit: august

More details later this term



MATERIAL

Main textbook:

Soramäki, Cook - Network Theory and Financial Risk

Other good books on network science are:

Menzcer, Fortunato, Davis - A First Course in Network Science

Barabasi - Network Science (Available for free at www.networksciencebook.com)

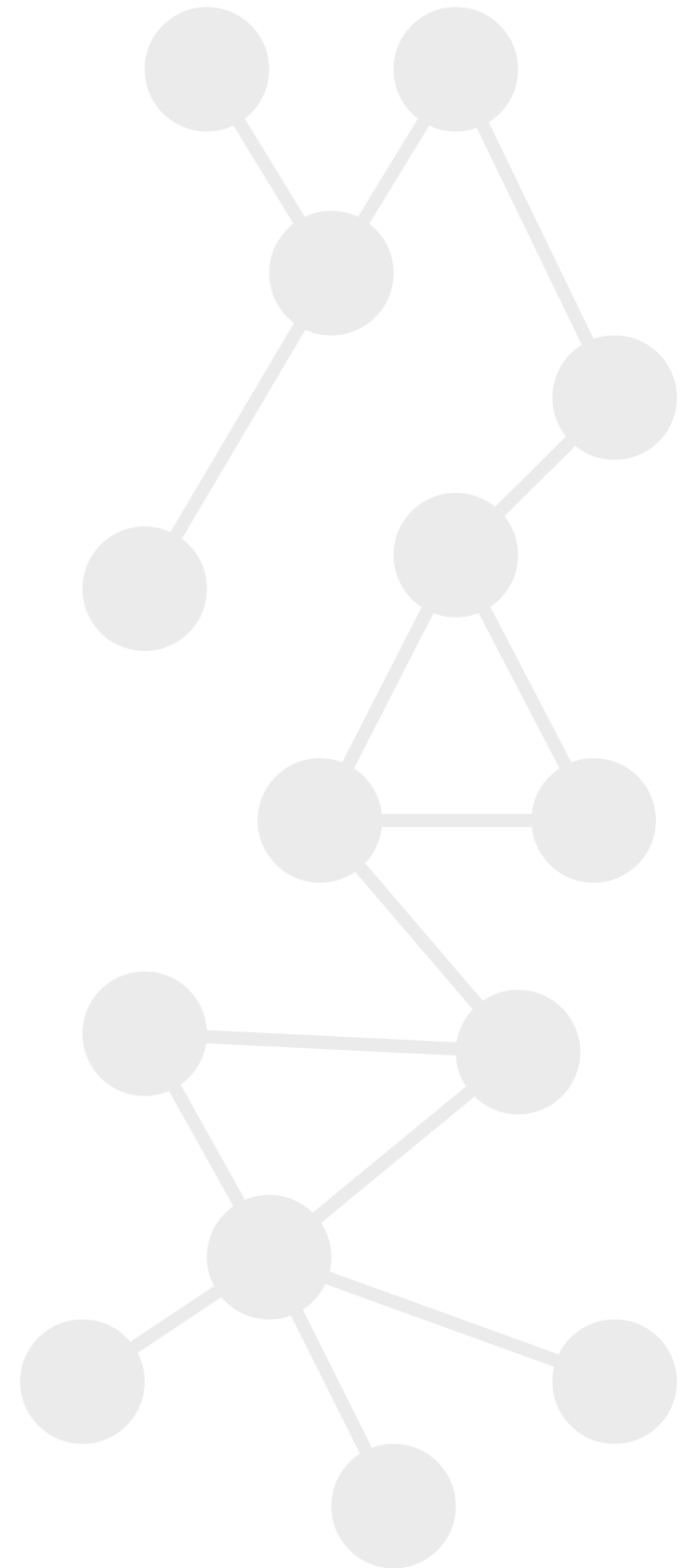
Supplementary material will be provided when needed



PIAZZA

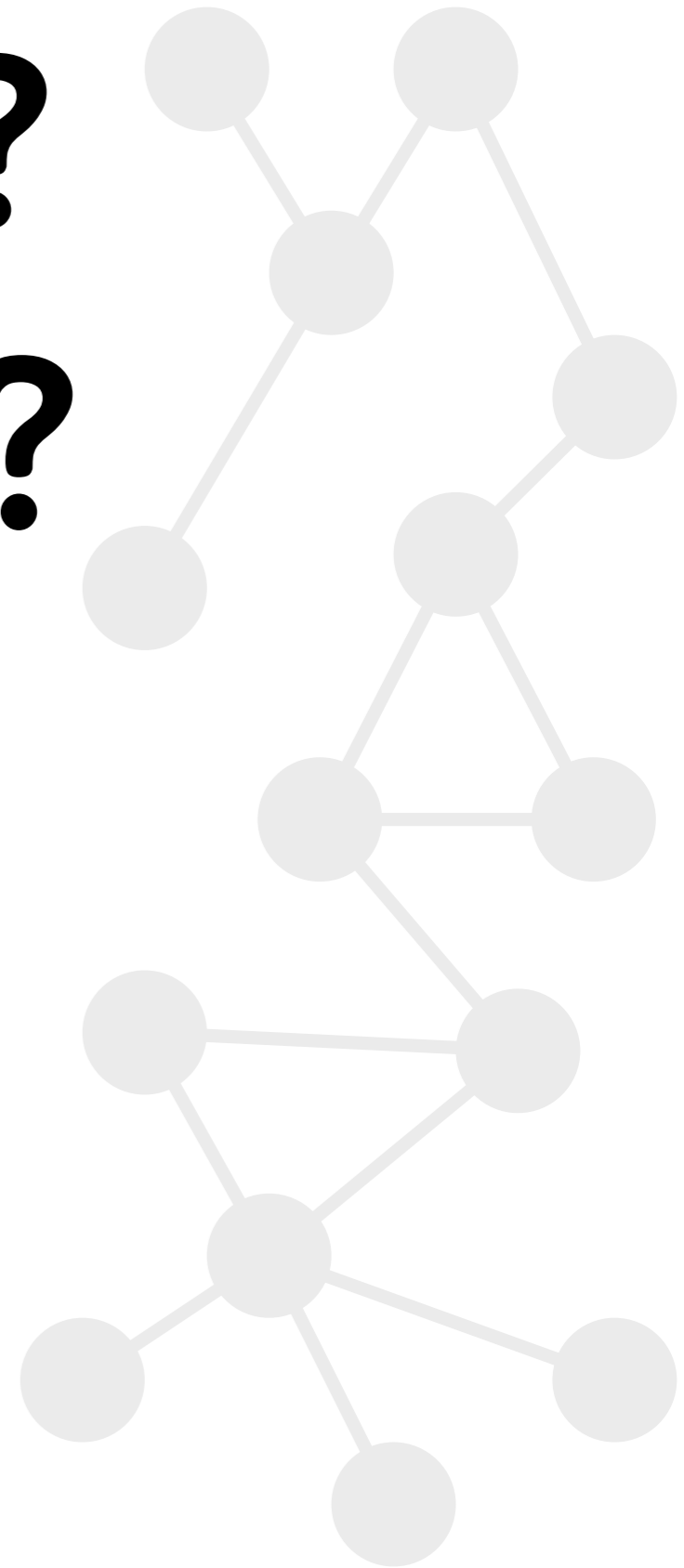
Accessible from:
LEARN and opencourse

Primary use: Discussion for students



PROBLEMS? QUESTIONS?

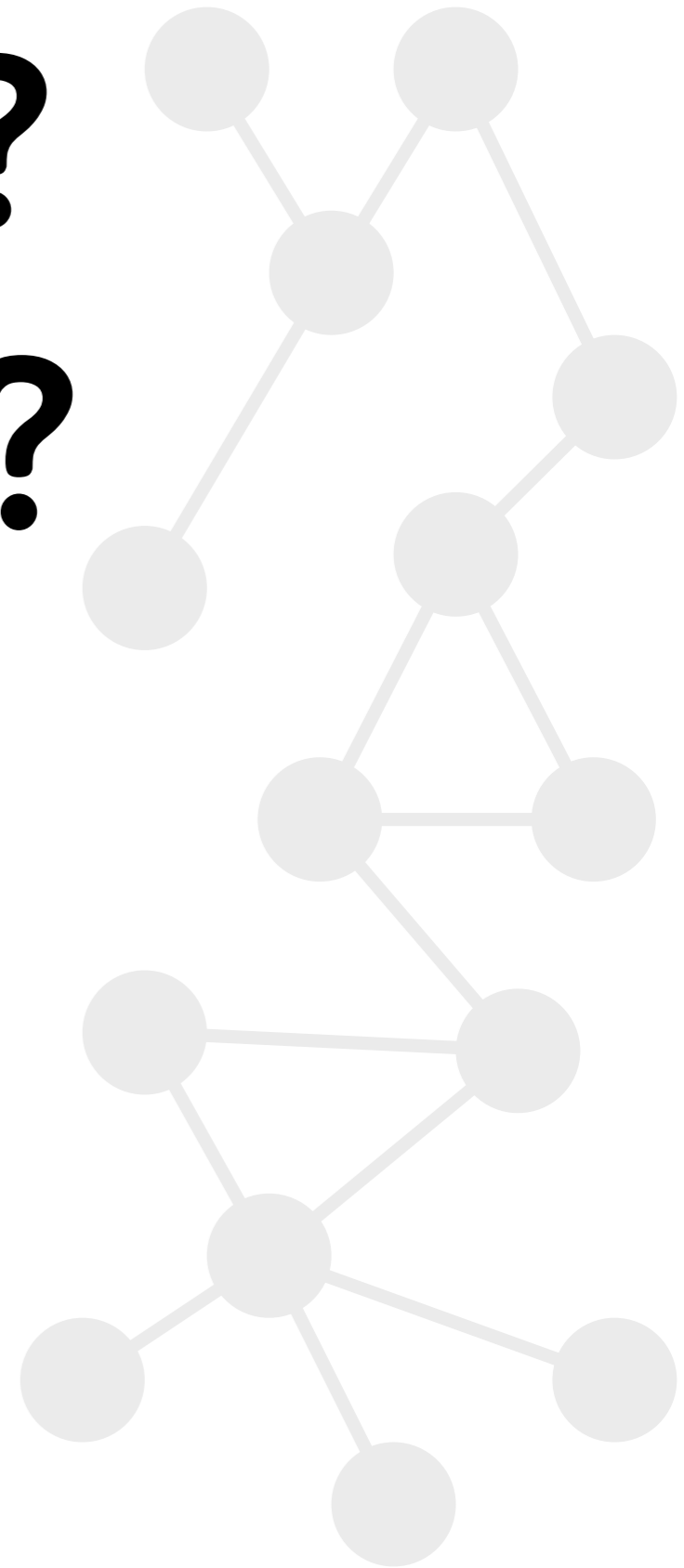
If about current lecture, ask in class



PROBLEMS? QUESTIONS?

If about current lecture, ask in class

If about anything else ask on Piazza

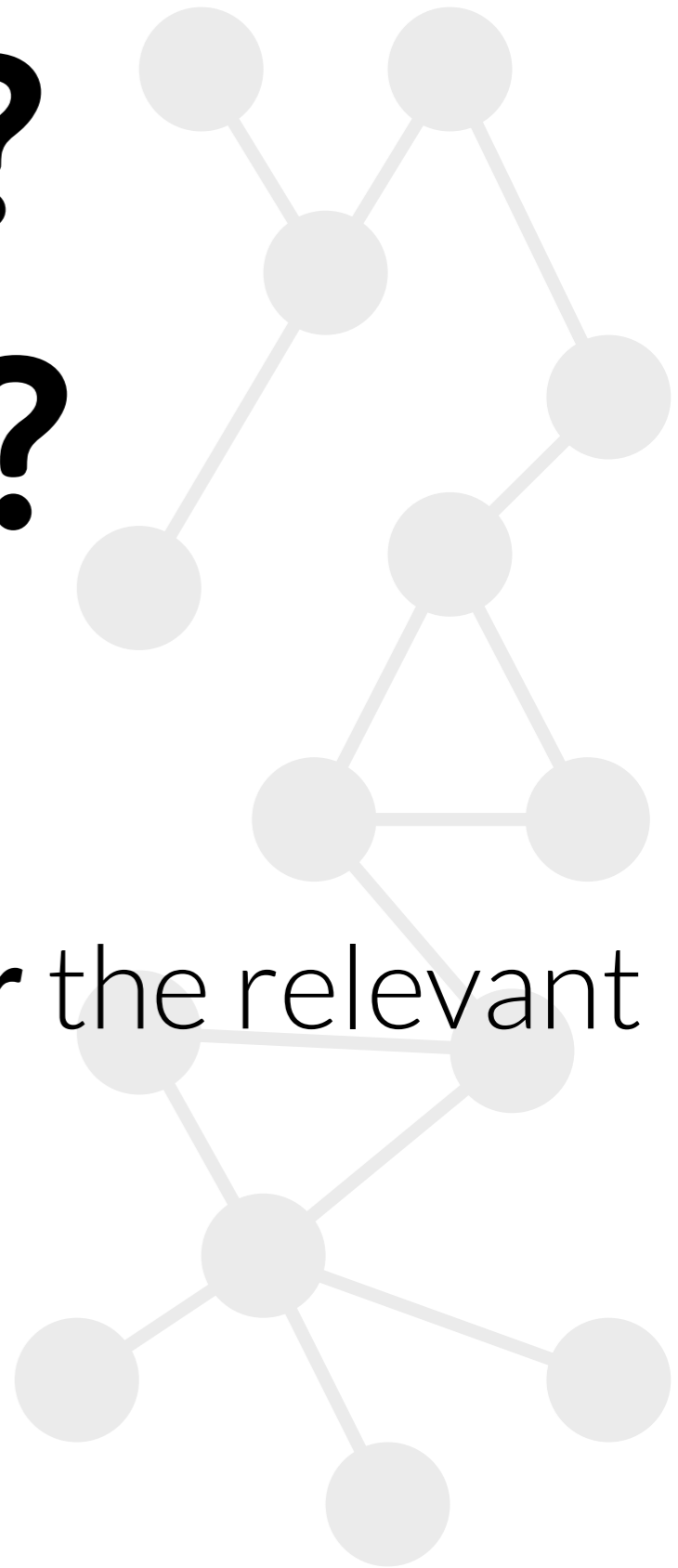


PROBLEMS? QUESTIONS?

If about current lecture, ask in class

If about anything else ask on Piazza

If about exercises, ask on Piazza **after** the relevant tutorial



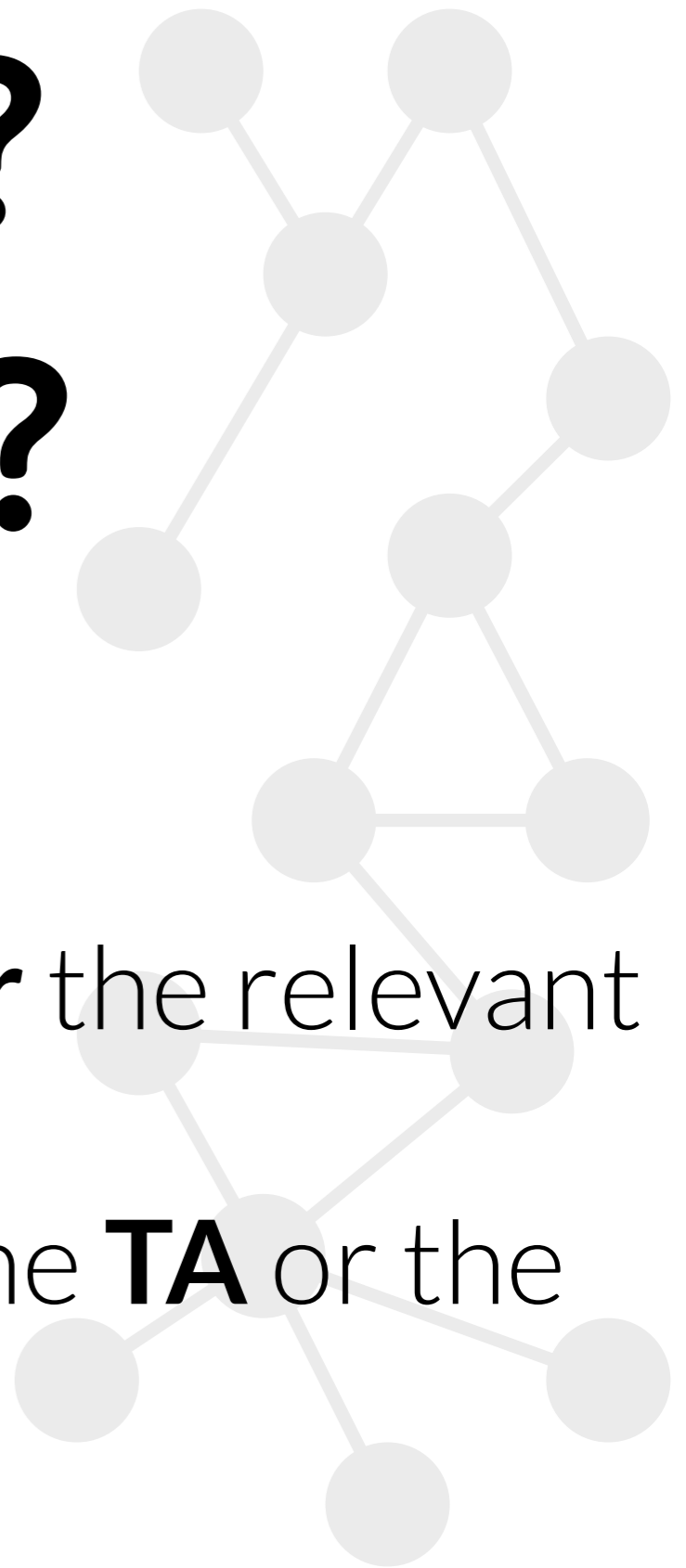
PROBLEMS? QUESTIONS?

If about current lecture, ask in class

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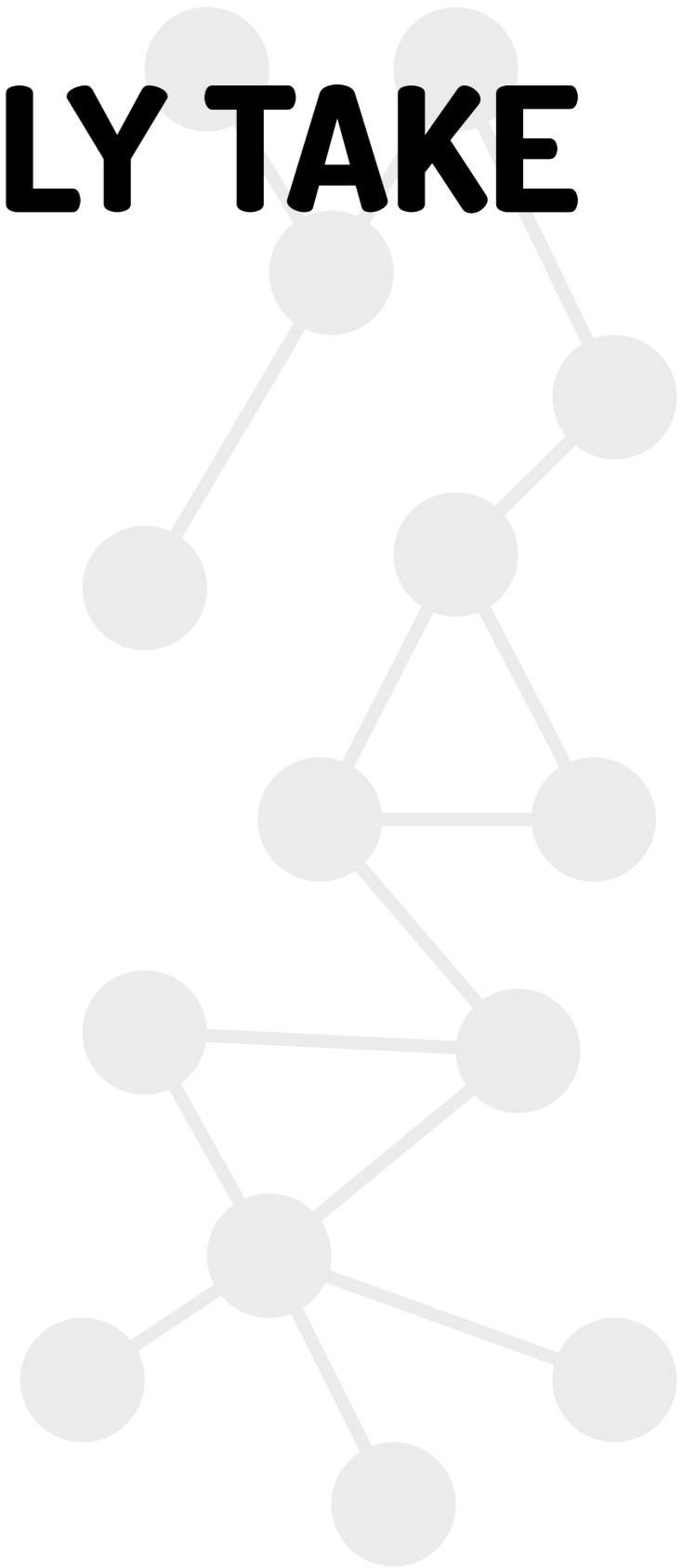
If about exercises, ask on Piazza **after** the relevant tutorial

If about coursework: ask on Piazza, the **TA** or the **lecturer** will answer



HOW TO SUCCESSFULLY TAKE THIS COURSE

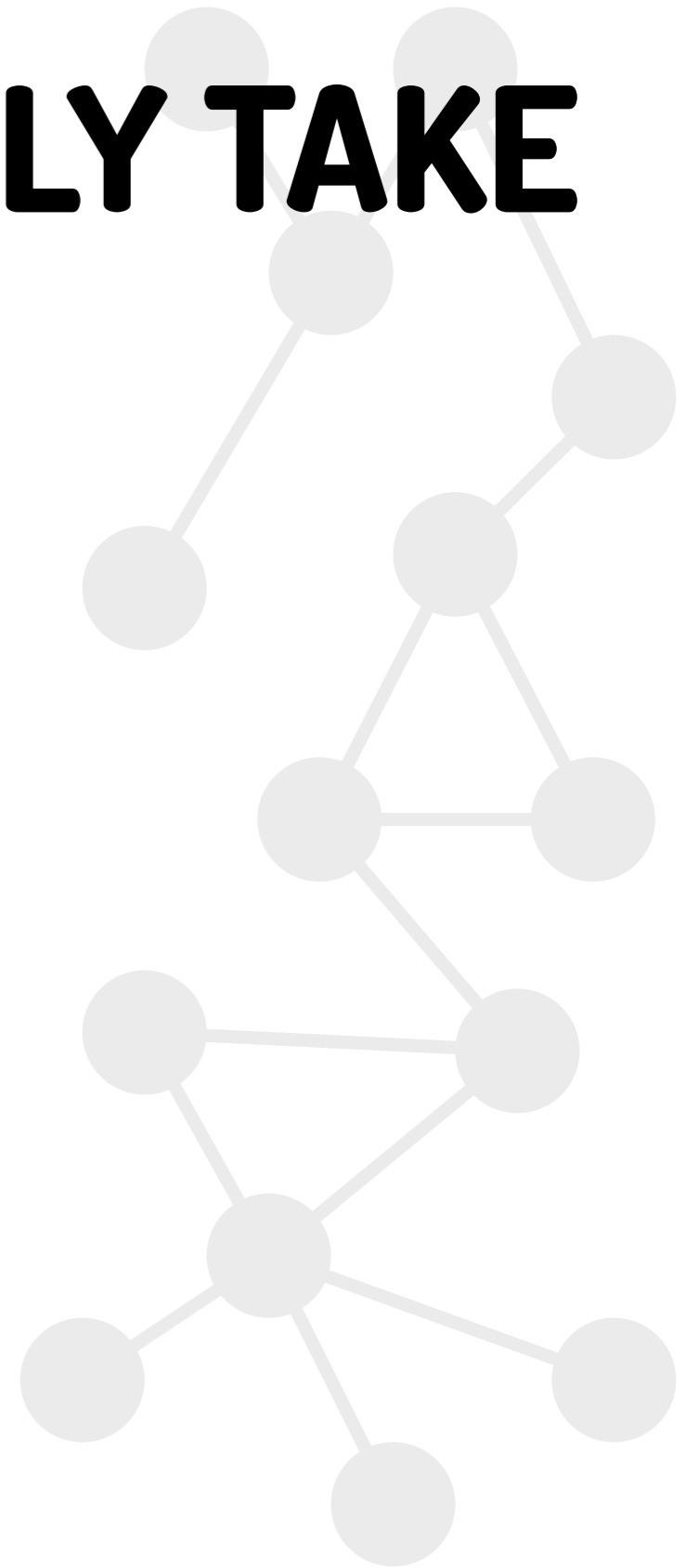
Engage during lectures



HOW TO SUCCESSFULLY TAKE THIS COURSE

Engage during lectures

Interact with other students

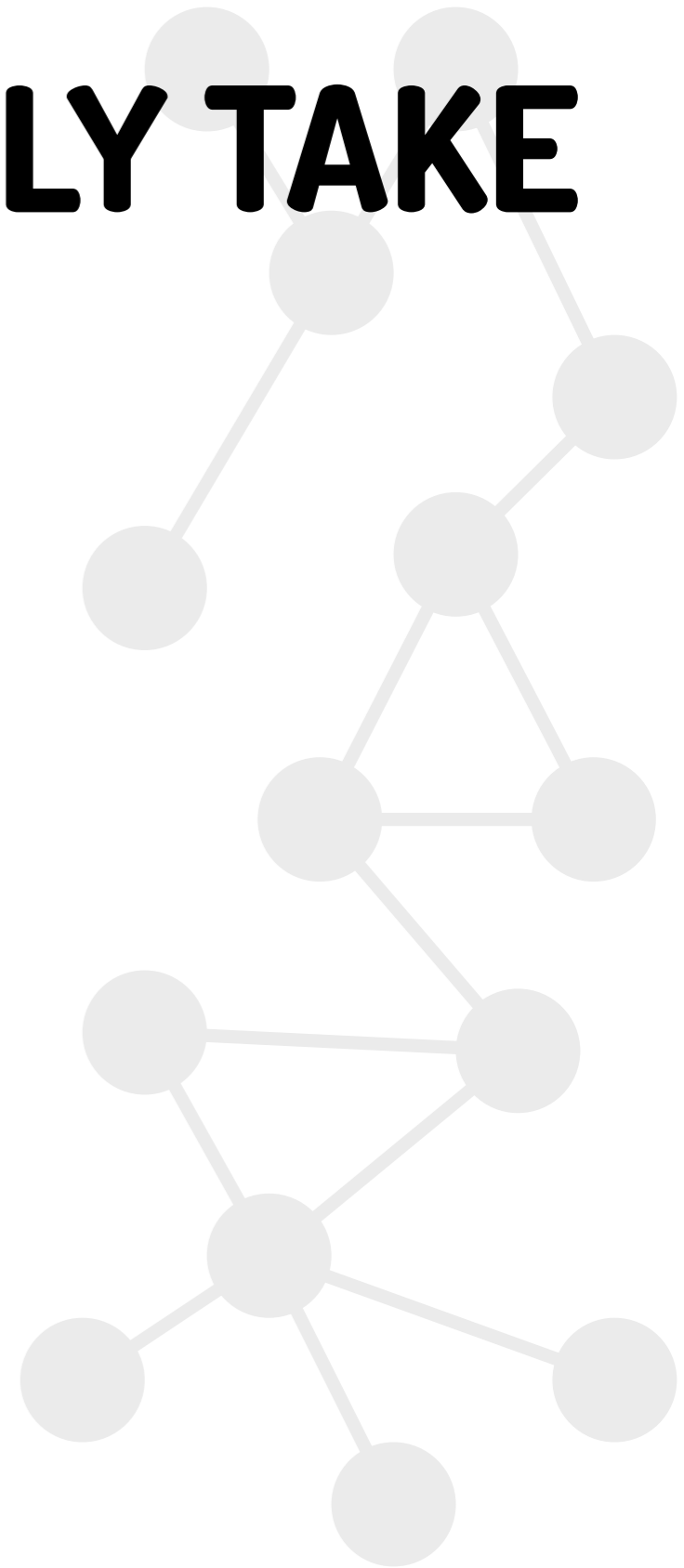


HOW TO SUCCESSFULLY TAKE THIS COURSE

Engage during lectures

Interact with other students

Learn how to solve problems

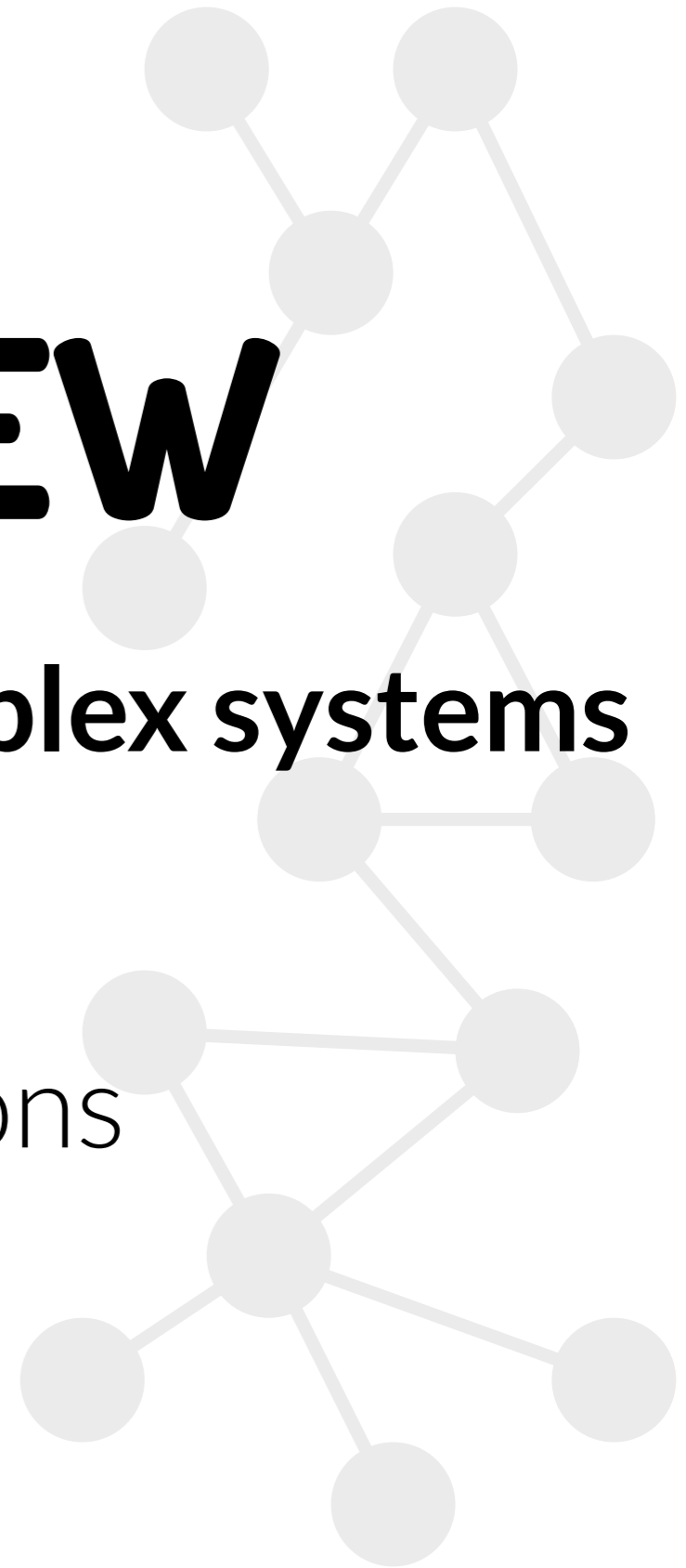


COURSE OVERVIEW

Learn about (socio-economic) **complex systems**

Networks and social networks

Agent-based models and simulations



OOOOOH....

I'M READY, ARE YOU READY?

memegenerator.net

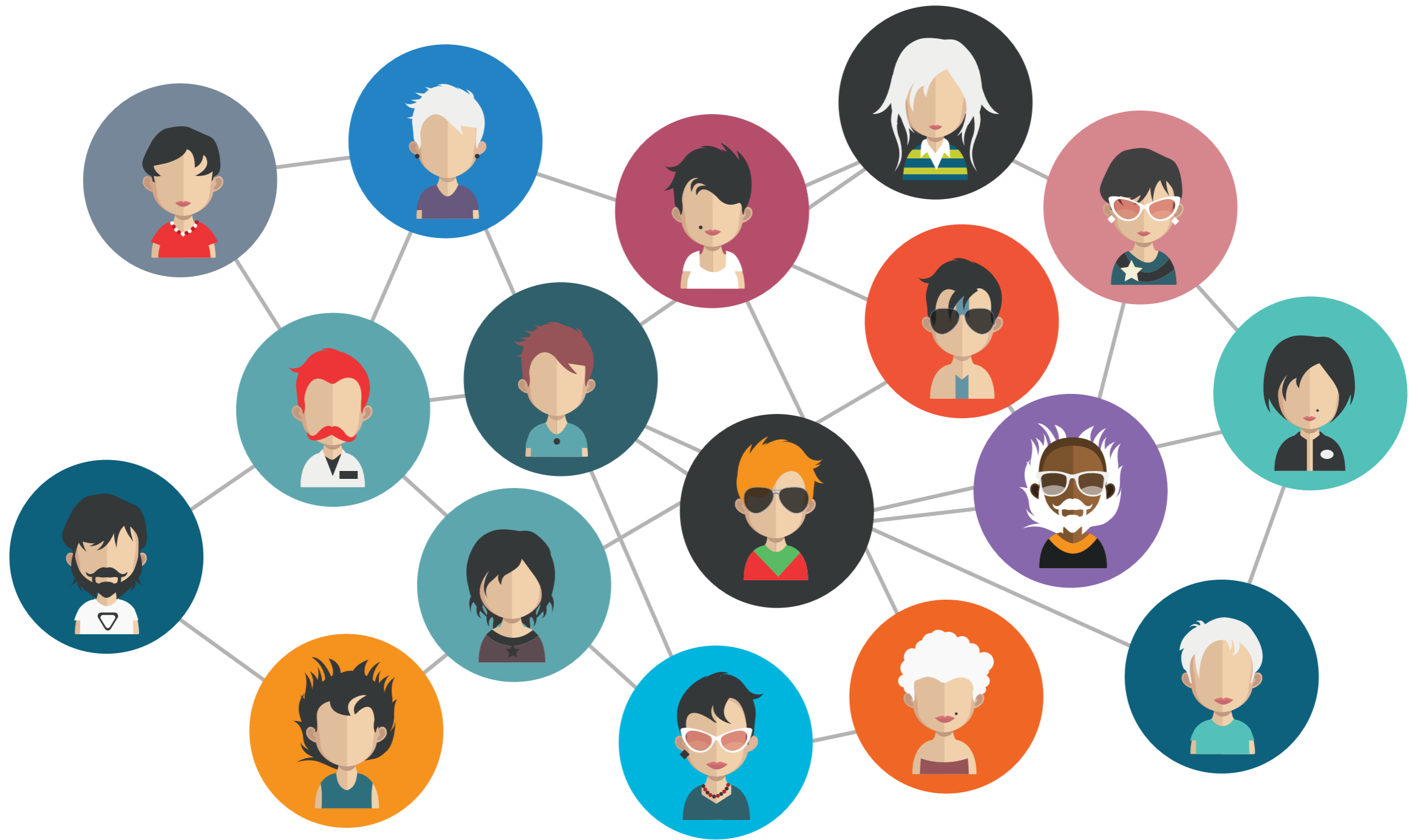
COMPLEX SYSTEMS

“I THINK THIS CENTURY WILL BE THE CENTURY OF COMPLEXITY.”

STEPHEN HAWKING



SOCIO-ECONOMIC COMPLEX SYSTEMS



TWO APPROACHES

Describe the system

TOP-DOWN APPROACH

MODEL MACRO BEHAVIOUR

DESCRIPTIVE ANALYSIS

Describe the elements

BOTTOM-UP APPROACH

MODEL MICRO BEHAVIOUR

EMERGING PATTERNS

DESCRIBE THE SYSTEM

Network science

INTERACTION BETWEEN ELEMENTS

UNVEIL PROPERTIES OF A SYSTEM WITH ANALYSIS

RELATED TO DATA SCIENCE

WHEN TO USE

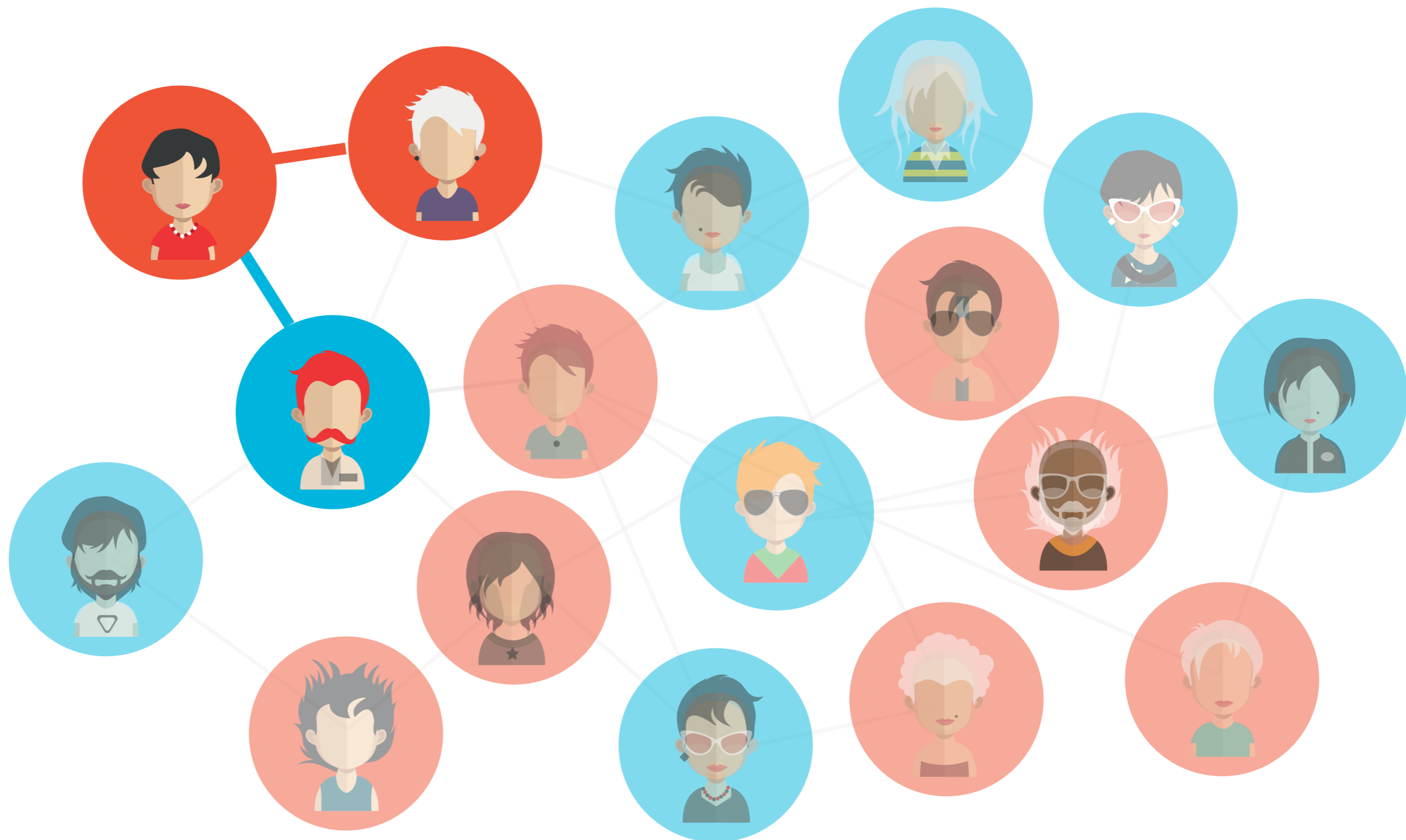
Network science

**WE DON'T KNOW THE BEHAVIOUR OF ELEMENTS
OR IT IS TOO COMPLICATED TO MODEL**

WE HAVE DATA ON THE BEHAVIOUR OF THE SYSTEM

**WE DON'T NEED TO KNOW WHY ELEMENTS
BEHAVE IN A PARTICULAR WAY**

EXAMPLES IN FINANCE AND ECONOMICS



Financial Crisis at Crash of 2008

Disbelief, and a punter reach

The plunging market yesterday dealt a new blow to investors' confidence, as the government decided to inject HK\$1 million into counselling services for losers in the financial crisis.

Retail investors at the Central Bank of Hong Kong yesterday expressed disbelief at the news.

"The financial crisis has pushed the US and European economies into a deep downturn or even recession, prolonging the tough times for Hong Kong's trade sector – the industry that employs the most workers."

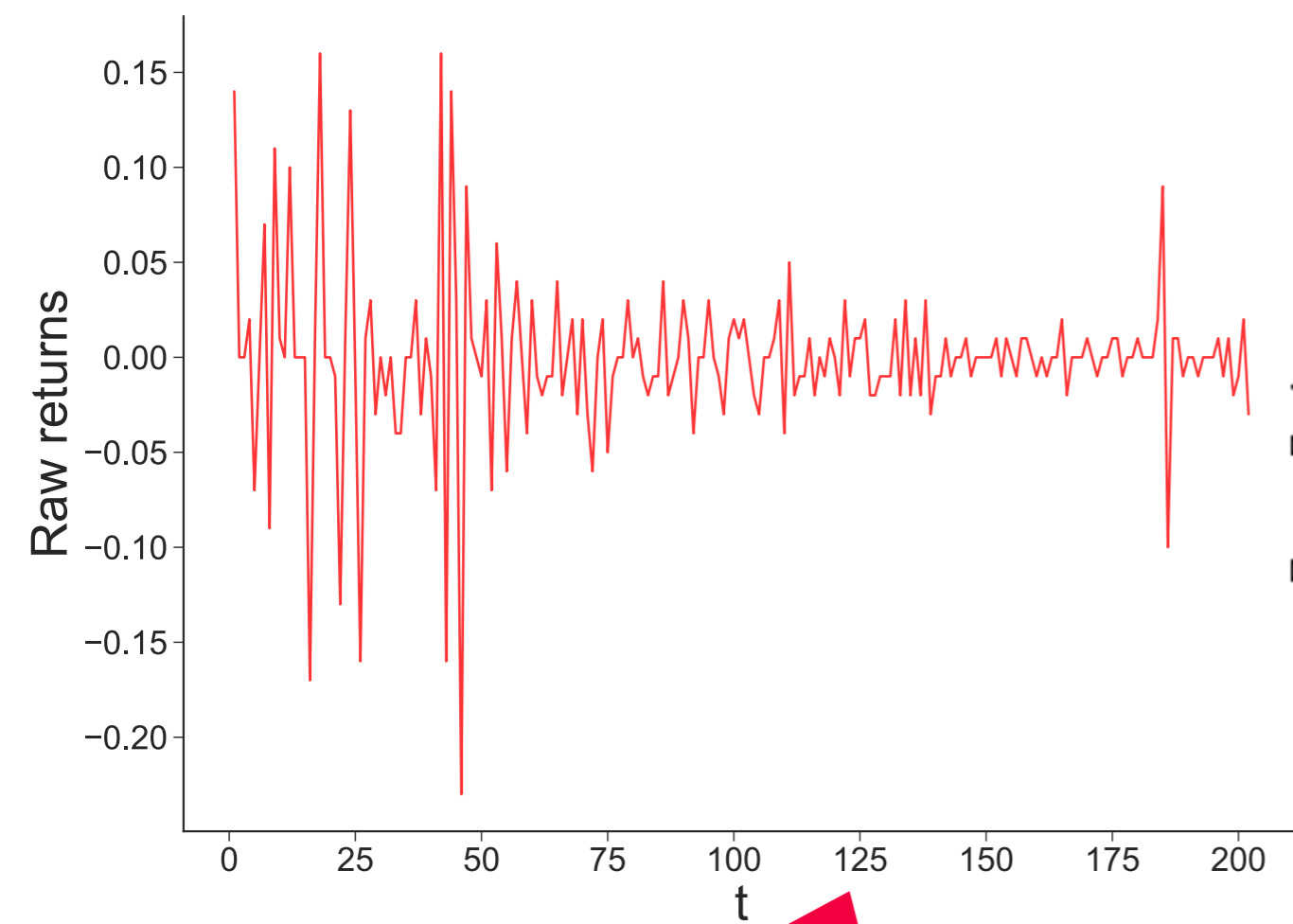
"Major real estate agencies have also started to cut headcount as property transactions turn more sluggish."

"The bank revised its economic forecast for this year down to 1.5 per cent. For next year, it is 2 per cent."

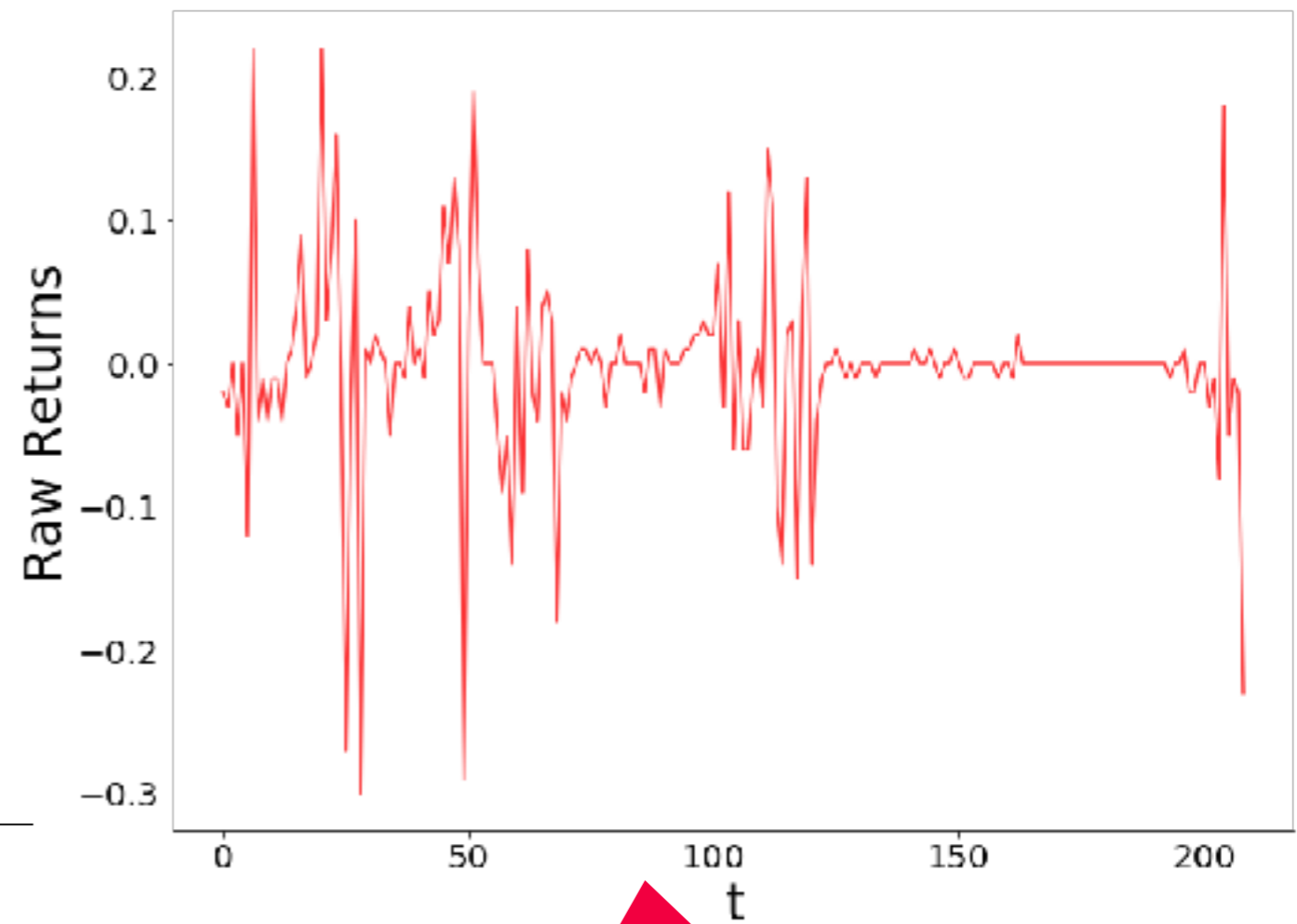
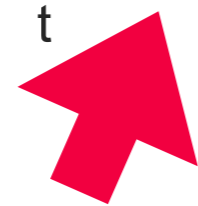
"The government is aiming for a normal growth rate in a report enough to support the economy."

Last week, Chao Chi-chang spoke at a press conference.

SATURDAY, OCTOBER 11, 2008

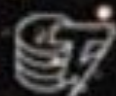


Historical



Simulated







WHY IS THIS COURSE USEFUL?

**MANY FINANCIAL INSTITUTIONS AND BUSINESSES
HAVE LOADS OF PERSONAL DATA**

SUCH INSTITUTIONS DON'T KNOW HOW TO USE THESE DATA

THEY NEED EXPERTS TO DO SO BUT CAN'T FIND THEM!

**YOU WILL BE THOSE
EXPERTS!**

CHOOSE YOUR OWN ADVENTURE

GO TO WWW.SLIDO.COM

ENTER THIS CODE: 2550357

WAIT FOR ME TO EXPLAIN WHAT YOU'RE LOOKING AT

WATCH THIS

The hidden networks of everything

<https://www.youtube.com/watch?v=RfgjHoVCZwU>

Connected: the power of six degrees

<https://www.youtube.com/watch?v=2rzxAyY7D7k>