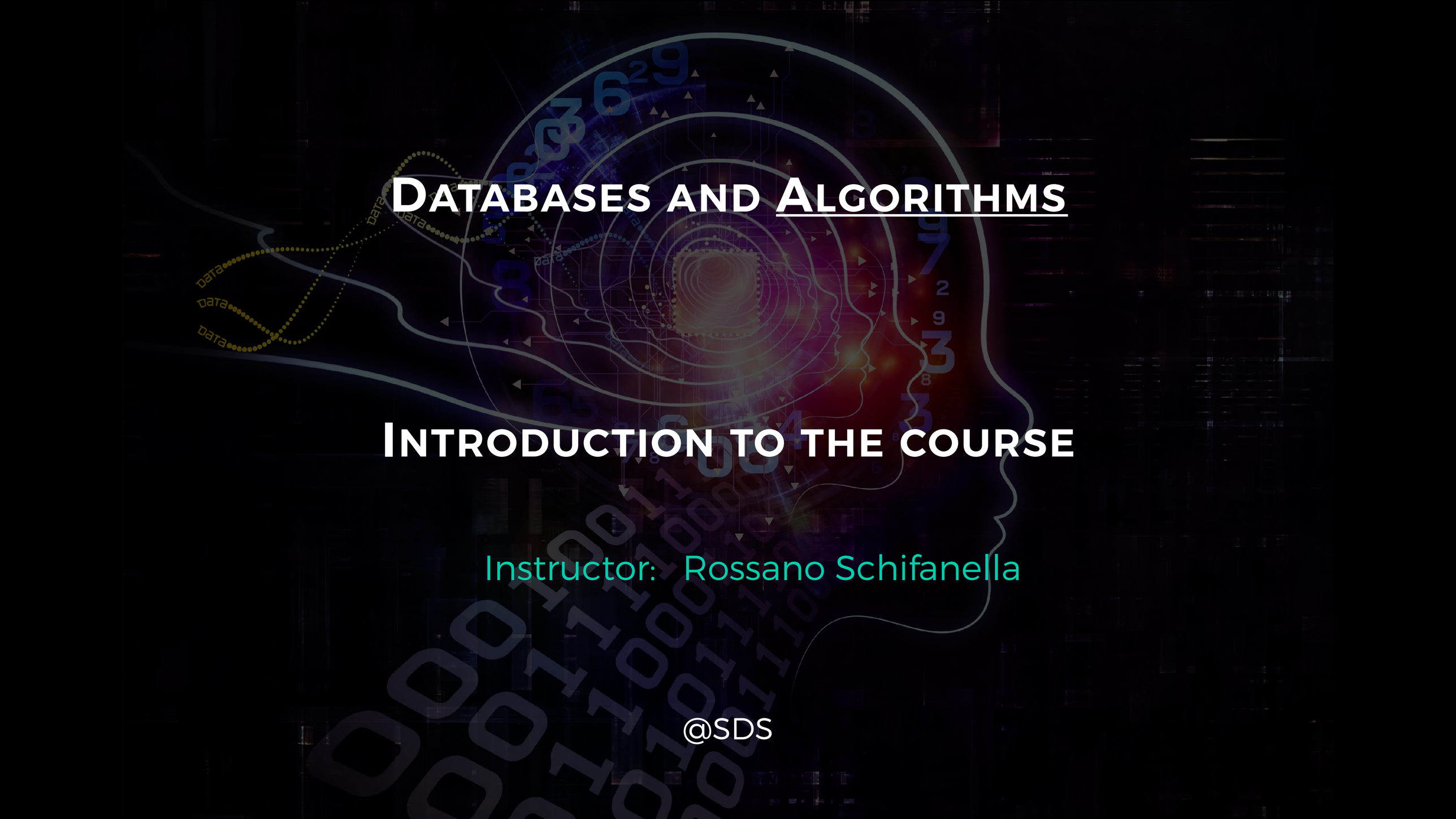


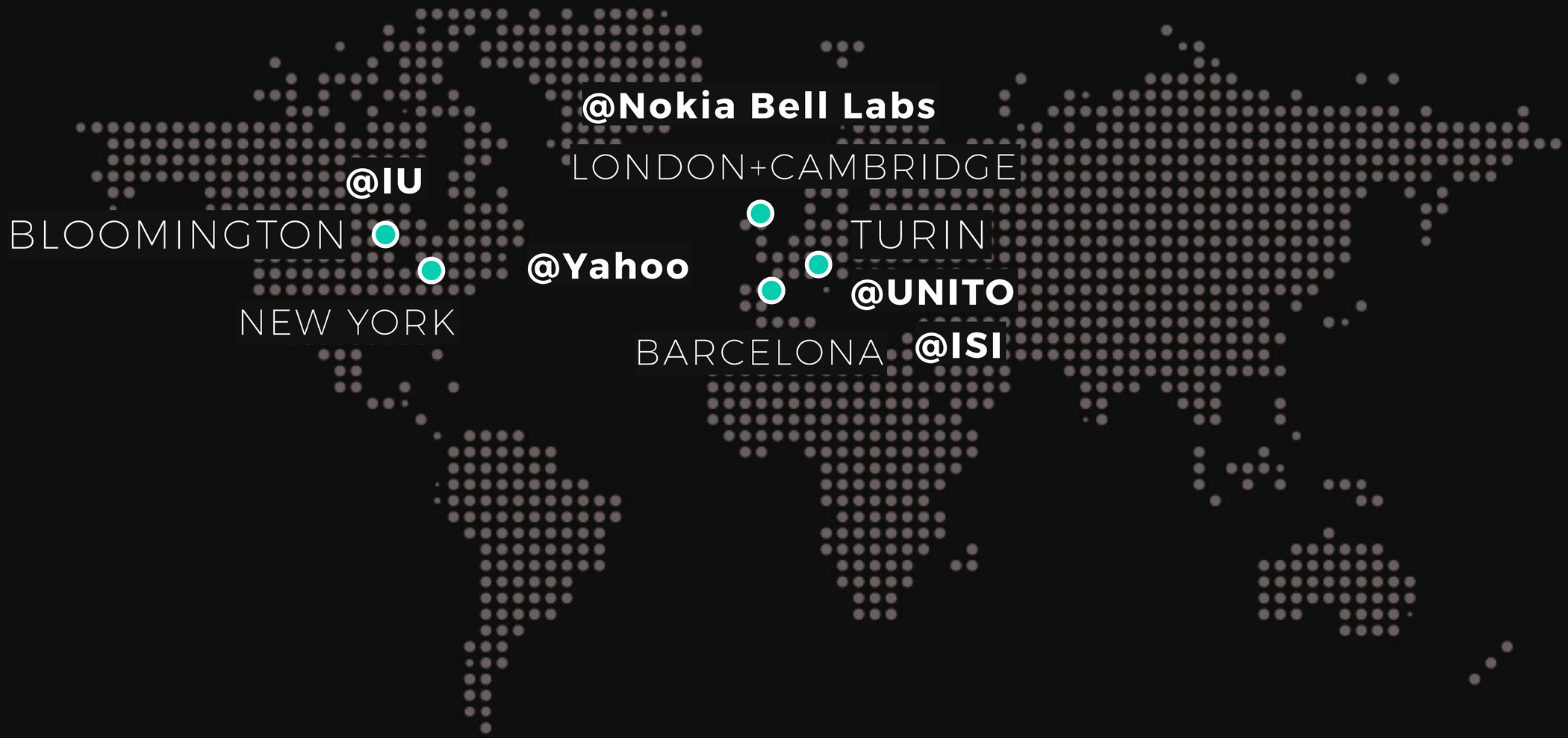
Databases and Algorithms

Introduction to the course

Instructor: Rossano Schifanella

@SDS

Few words about me



Few words about me

- Assistant professor at the computer science department @unito (**http://www.di.unito.it/~schifane**)
- Responsible for the **algorithms** part of this course.
- Email: **schifane@di.unito.it**
- Office hours: send me an email to set up an appointment

Organization

- **6 credits (48h)**
- **Schedule:**
  - Wednesday: 10.15-13.15
  - Thursday: 14.00-16.00
  - Friday: 14.00-17.00
  - Have a look at the shared calendar and the communications through the Moodle course web site.
- **Classroom:**
  - Aula Informatica C + Aula 30

SUPPORTING MATERIAL

- **All** supporting materials (slides, assignments, suggested books and readings, notes, …) will be made available through the moodle course at:

  http://math.i-learn.unito.it/course/view.php?id=1058

- The moodle module is the **official reference** for anything related to the course. Any communication will be handled through the course news forum.
- Please, **register to i-learn asap**.

ASSESSMENT

- Goal:
  - **Solve a real problem with a class of algorithms studied in class**
- Components (this could slightly change and the details will be available throughout the course)
  - Essay
  - Code review
  - Oral discussion
- 1 test per session, max 2 sessions in an academic year

The COURSE

- Purpose: **an introduction to the design and analysis of algorithms**
  - Not a lab or programming course
  - Not a math course, either
- Textbook: Introduction to Algorithms, Cormen, Leiserson, Rivest, Stein (3rd edition)
  - An excellent reference you should read
  - You can use any other books or resources you like better

SKILLS YOU'LL LEARN

- Start **"thinking algorithmically"**
- Become a **better programmer**
- Literacy with computer science's "greatest hits"
- Ace your **technical interviews**
- Play with real data to **solve real problems**

WHY STUDY ALGORITHMS?

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  - "Everyone knows Moore's Law – a prediction made in 1965 by Intel co-founder Gordon Moore that the density of transistors in integrated circuits would continue to double every 1 to 2 years....in many areas, performance gains due to improvements in algorithms have vastly exceeded even the dramatic performance gains due to increased processor speed."
    - Excerpt from Report to the President and Congress: Designing a Digital Future, December 2010 (page 71).

WHY STUDY ALGORITHMS?

- Important for all other branches of computer science
- Plays a key role in modern technological innovation
- **Provides novel “lens” on processes outside of computer science and technology**
  - quantum mechanics, economic markets, evolution

WHY STUDY ALGORITHMS?

- Important for all other branches of computer science
- Plays a key role in modern technological innovation
- Provides novel “lens” on processes outside of computer science and technology
- **Challenging and good for the brain!**

Questions?

@rschifan

schifane@di.unito.it

http://www.di.unito.it/~schifane