# Bachelor Introduction

# First year students CS, IMM, LI

Department of Computer Science
VU University Amsterdam

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Study Advisor and Researcher
in Human Computing

# What I'm going to present

- What computer science is about
- An intro to our department
- What does an academic study mean
- Curricula
- Practical matters

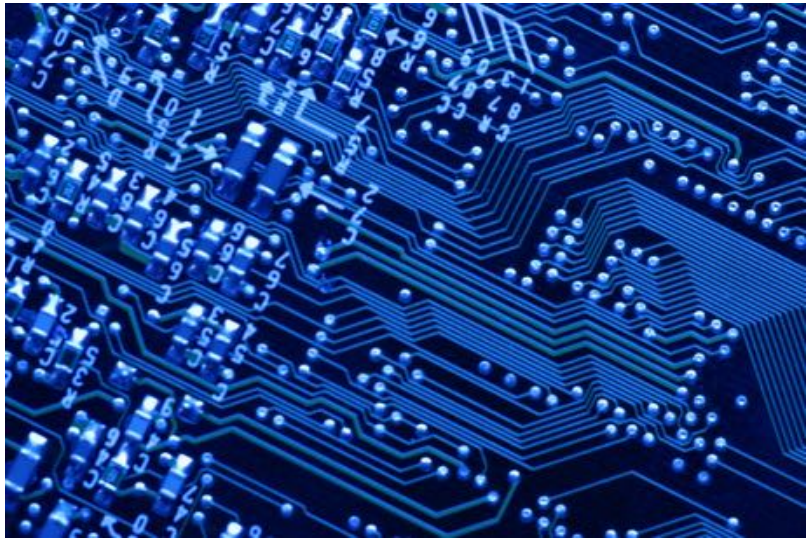
# Computer Science

What it is about

# From cradle to grave

# Inside and all around us

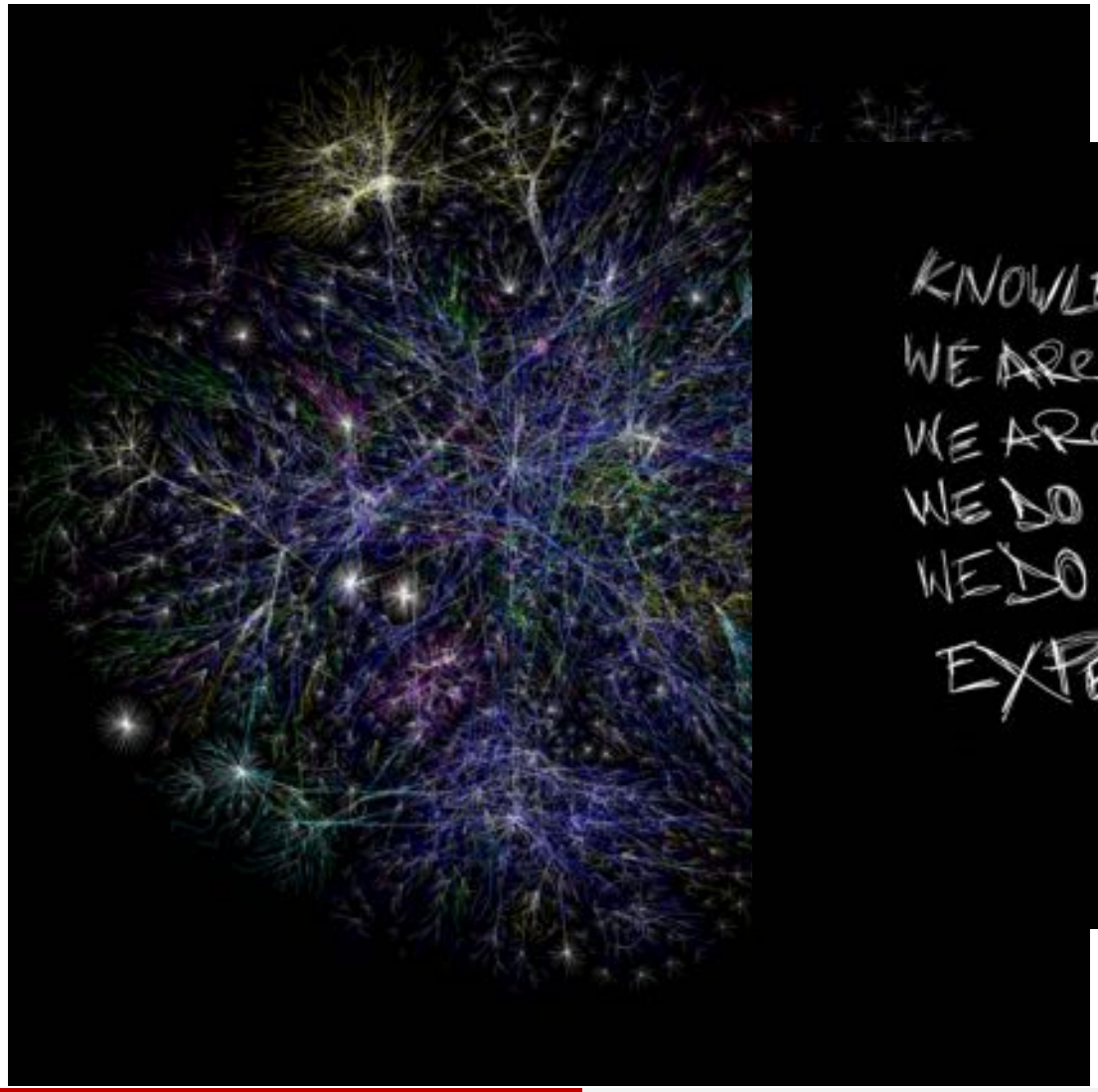
# Who is in the majority in this room?



Computing devices

People

# Blessing or curse?



# Who do you want to be?

*Everybody is a user*

*You can be a maker*

# What is Computer Science?

*"A computer scientist specializes in the theory of computation and the design and study of computers or computational systems"*

# What is Computer Science?

1970ies

20 years later

# What is Computer Science?


20 years later

20 years later?

**YOU can shape the future**

# Where to apply it?

- How do you design a database system to process all twitter messages in the world?
- How do you work in teams across the globe to build a piece of software using crowdsourcing?
- How do you test billions of lines of code?
- How can you use smartphones in disaster situations to build a communications network?
- How do we prevent websites from being hacked?

# Computer Science

At the Vrije Universiteit

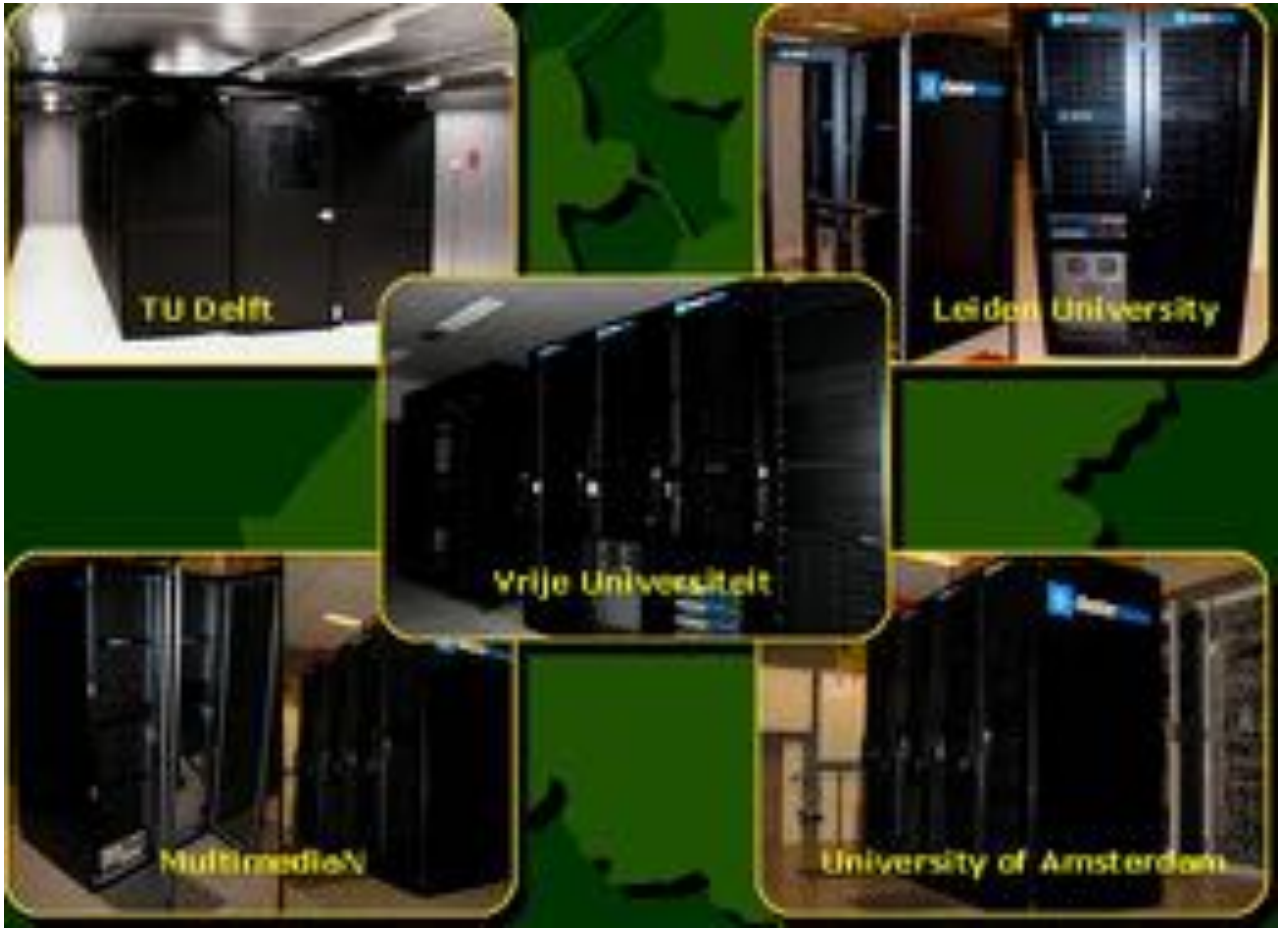
# Focus of our department: "The networked world"

# User experience: Intertain Lab

European Research Council

Supporting top researchers
from anywhere in the world


# DAS-5


TU Delft
Leiden University
Vrije Universiteit
MultimediaN
University of Amsterdam


JEOPARDY!


$9,800
Chris


$2,000
Ken
$5,000
WATSON
$5,000
BRAD

# Alice care robot


# Web for social development

# Groups in the department

- **Artificial Intelligence**
  - Agent Systems
  - Computational Intelligence
  - Knowledge Representation & Reasoning
- **Bioinformatics**
- **Business Web & Media**
  - Business & Web
  - Web & Media
- **Computer Systems**
  - High Performance Distributed Computing
  - Systems and Network Security
- **Information Management & Software Engineering**
  - Software and Services
  - Information Systems
  - Business Informatics
- **Theoretical Computer Science**

# An academic study

What does this mean ?

# Academic education is **not** meant for *passive* consumption

This means:

- An active attitude
  - involvement, commitment, and self-efficacy
  - you are supposed to study 40 hours per week !
- Intellectual creativity
  - the search toward a solution
  - this search often teaches you more than the solution itself

# Academic competences (1)

- Hypothesis
  Formulate plausible explanations
- Synthesis
  of programs, models, simulations, …
- Analysis
  of problems, data sets, …
- Research method
  Qualitative (observation) or quantitative (measurements)
- Reflection
  Why does a model work? Which knowledge have I gained?

# Academic competences (2)

- Literature study
  Summarize, relate different papers
- Report
  Write up in a structured way what you have done, and why
- Present
  For different target audiences
- Discuss
  Formulate arguments, and analyse arguments from others
- Originality
  Presenting work from others as your own is penalized

# Rules and regulations

- There are official *Rules and Regulations*
  ***http://www.few.vu.nl/en/current-students/regulations/index.asp***
- Copying text from a book or the Internet without reference is *fraud*
- Copying from a fellow student is *fraud* too
- Placing solutions to homework assignments on say your Facebook page isn't allowed
- Don't take unauthorized material to an exam
- Violations are treated by a *fraud committee* and may lead to suspension

# Curricula

Computer Science
Information, Multimedia & Management
Lifestyle Informatics

# Structure of the curriculum

- An academic year has 6 periods:
  8-8-4 8-8-4 weeks

- 6 EC per course

- Bachelor: 3 years (180 EC)
- Master: 1 or 2 years (60 or 120 EC)

# Structure of the curriculum

- General academic education
  - 30 EC
- General “computer science” courses
  - 45 EC
- Curriculum-specific courses
  - 75 EC
- Minor / choice
  - 30 EC

- Total: 180 EC

# Computer Science

## YEAR 1

| period 1 | period 2 | period 3 | period 4 | period 5 | | period 6 |
|---|---|---|---|---|---|---|
| Intro Computer Science | Pervasive Computing | Web Technology | Computer Systems | Academic English | History of Science | Project Application Development |
| Computational Thinking | | | | | | |
| Programming (Java) | Computer Networks | | Logic and Sets | Networks and Graphs | | |

## YEAR 2

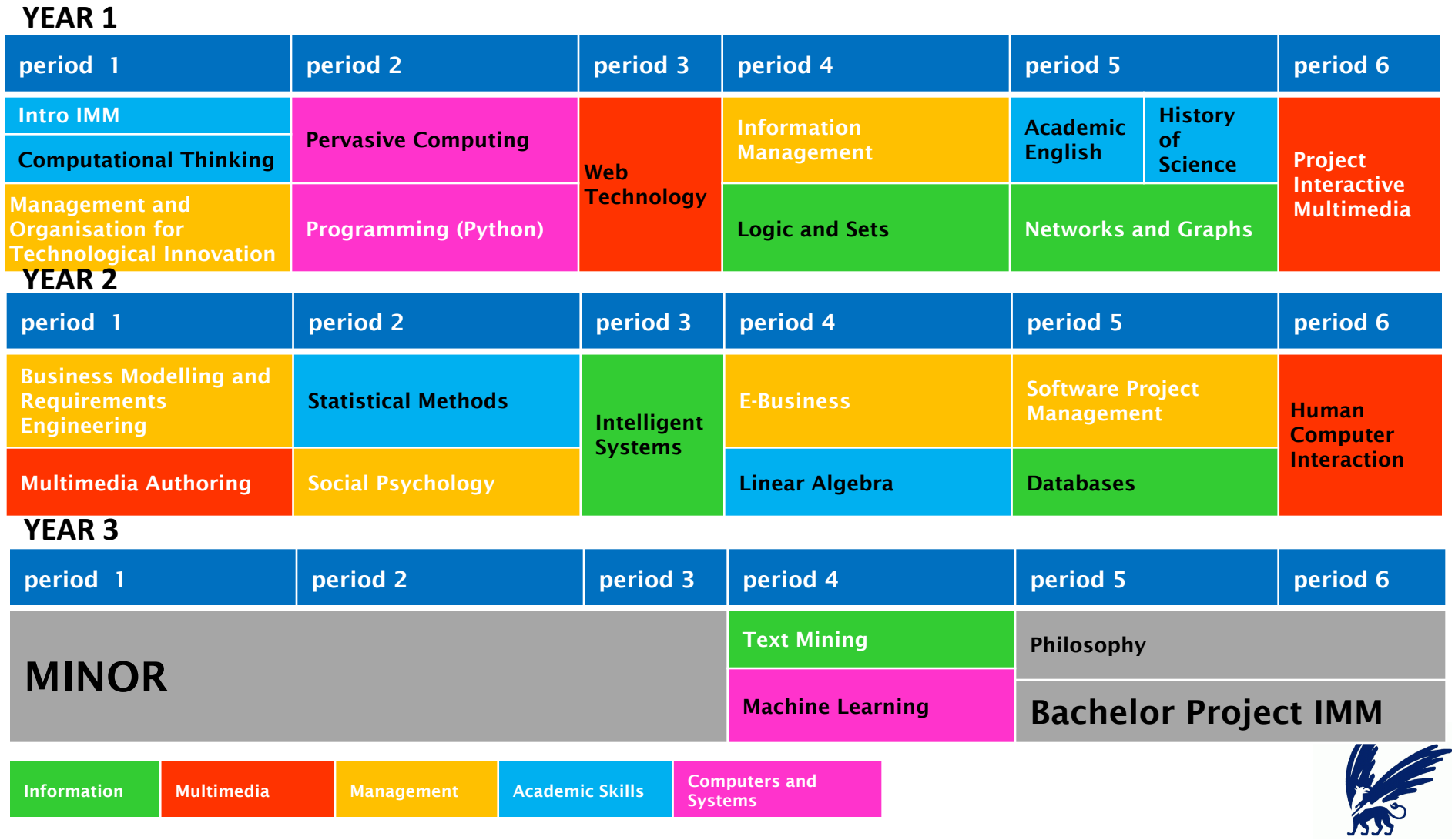
| period 1 | period 2 | period 3 | period 4 | period 5 | period 6 |
|---|---|---|---|---|---|
| Advanced Programming | Statistical Methods | Intelligent Systems | Software Modelling | Logic and Modelling | Human Computer Interaction |
| Data Structures and Algorithms | Operating Systems | | Linear Algebra | Databases | |

## YEAR 3

| period 1 | period 2 | period 3 | period 4 | period 5 | period 6 |
|---|---|---|---|---|---|
| MINOR | | | Automata and Complexity | Philosophy | |
| | | | Machine Learning | Bachelor Project CS | |

| Data Processing | Networks / Systems | Programming / Software Engineering | Academic Skills | Logic / Algorithms |
|---|---|---|---|---|

# Information, Multimedia & Management



# Lifestyle Informatics

**YEAR 1**

| period 1 | period 2 | period 3 | period 4 | period 5 | | period 6 |
|---|---|---|---|---|---|---|
| Intro Lifestyle Informatics | Pervasive Computing | Web Technology | Introduction to Modelling and Simulation | Academic English | History of Science | Behavior and Health |
| Computational Thinking | | | | | | |
| Introduction to Psychology and its Methods | Programming (Python) | | Logic and Sets | Project Lifestyle Informatics | | |

**YEAR 2**

| period 1 | period 2 | period 3 | period 4 | period 5 | period 6 |
|---|---|---|---|---|---|
| Intergrative Modelling | Statistical Methods | Intelligent Systems | Cognitive Psychology | Laboratory Lifestyle informatics | Human Computer Interaction |
| Multimedia Authoring | Healthcare Process in Secondary Care | | Linear Algebra | Databases | |

**YEAR 3**

| period 1 | period 2 | period 3 | period 4 | period 5 | period 6 |
|---|---|---|---|---|---|
| MINOR | | | Text Mining | Philosophy | |
| | | | Machine Learning | Bachelor Project LI | |

| Lifestyle Informatics | Computer related courses | Human related courses | Academic Skills |
|---|---|---|---|

# Honours program

- On top of your nominal Bachelor program
- Total of 30 extra ECTS, in years 2 and 3
- Split into departmental and (interdisciplinary) university program
- Only top students are allowed to participate
- *Excellence track* in year 1 can serve as entry into and provides ECTS for honours program

✓ extra assignment for two courses in 1st semester

✓ group project in 2nd semester

# Studying abroad

Check out VUnet “Studying Abroad”

All partner universities can be found on the VU World Map: www.vu.nl/exchange-partners

Information sessions will start at the end of September

Application deadline for exchange in 2016-2017:

**10 January 2016**

Contact: outgoing@vu.nl

# Practical matters

- Lecture slots: typically two times 45 minutes
- Schedule: **https://rooster.vu.nl** (click on *English*)
- Study guide & Blackboard
- Register for courses and exams
- One exam and one resit per course
- Mentor group & Study adviser
- Education office
- BSA in year 1 (42 ECTS), and “harde knip”

# Who can help you

In this order:

1. Students
2. Teaching Assistants
3. Lecturers
4. Study Advisor
5. Student Counselors (Not the dean)
6. Student psychologist
7. Exam committee
8. Ombudsman (Complaint office)

# Tips for international students

**Your health**

*I feel alone and have no friends*

→ Socialize with other students, build friendships

*I have no motivation, or the only thing I do is study*

→ Have a good balance between studying and fun

*I have anxiety or stress*

→ It is okay to get help if you struggle

# Tips for international students

## Communication

*I have trouble understanding lectures*

→ Practice your English

*I was too late to register for an exam*

→ Be proactive and aware.

# Tips for international students

**Studying**

*Other students have more basic skills like coding*

→ Practice on these basic skills

*It is difficult to get used to the new teaching methods*

→ Team up with someone who is familiar with the methods

# Good luck with your studies !