# UvA Master Evening October 11, 2018

# — Computer Science —

A Joint Master Degree offered by:









## UvA Master Evening October 11, 2018: Computer Science

### Your hosts today:

- Stephen SwatmanMaster student Computer Science
- Alban Ponse
   Associate prof. (UHD) Computer Science (UvA)
   UvA program coordinator

### Our programme today:

► The Joint-Degree Master in Computer Science in Amsterdam

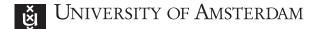




### Who is us?









Two universities for the price of one !!





## UvA and VU joint Master of Science Programme

### Disadvantage:

► Two teaching locations: Zuidas and Science Park

### **Advantages:**

- ▶ A Joint Degree: One diploma issued by both universities
- Larger selection of courses
- More research opportunities for graduation projects
- More first-class researchers at your finger tips
- More resources
- ▶ More of everything . . .





## MSc Computer Science UvA+VU

#### Fact Sheet:

- 2 years
- 120 ECTS credits
- Taught in English
- Internationally visible
- International student population
- Leading to a position in industry (in NL and abroad)
- Leading to a position in industrial research
- Leading to a career in academia





### **Curriculum Structure**

### Four pillars:

- Master Core (42 EC)
- Choice of 6 tracks (30 EC):
  - Big Data Engineering
  - Computer Systems Security
  - Foundations of Computing and Concurrency
  - Internet and Web Technology
  - Parallel Computing Systems
  - Software Engineering and Green IT
- Constrained Choice packages (12–18 EC)
- ► Free Choice courses (30–36 EC)





## Master Core (42 EC)

- ➤ One course (6 EC) on the social context of computer science:
  - History of Digital Cultures: on history of computing
  - ▶ ICT for Development: on ICT in developing countries
  - ▶ ICT4D in the Field: an ICT project in a rural community
  - ► E-commerce Law: on legal issues for on-line business
  - ▶ Entrepreneurship in AI and CS: on starting a company
- Literature Study and Seminar (6 EC)
  investigating existing solutions to a research question and
  presenting findings within one of the research groups
- ► **Graduation Project** (30 EC) independently executing a project, turning everything learned so-far into a master piece





## Track: Big Data Engineering (30 EC)

#### Track theme:

► How to cope with the enormous amounts of data on e.g. the Internet and social media and in companies

#### Track core:

- Data Mining Techniques
- Information Visualization
- ► Large-Scale Data Engineering
- Web Services and Cloud-based Systems
- Web Data Processing Systems

#### Track coordinator:



▶ Dr Adam Belloum (aszbelloum.wixsite.com/aszbelloum)

## Track: Computer Systems Security (30 EC)

#### Track theme:

Security of computer networks from a system's point of view

#### Track core:

- Hardware Security
- Computer and Network Security
- ► Binary and Malware Analysis
- Kernel Programming
- Distributed Algorithms

#### Track coordinator:

Prof.dr Herbert Bos
 (www.vusec.net/people/herbert-bos/)



## Track: Foundations of Computing and Concurrency (30 EC)

#### Track theme:

Apply formal methods in computing and concurrency

#### Track core:

- Protocol Validation
- Distributed Algorithms
- Advanced Logic
- Logical Verification
- Term Rewriting Systems

#### Track coordinator:

Dr Femke van Raamsdonk (www.cs.vu.nl/~femke/)



## Track: Internet and Web Technology (30 EC)

#### Track theme:

Software technology for web, internet, and cloud computing

#### Track core:

- Internet Programming
- Distributed Algorithms
- Performance of Networked Systems
- Web Services and Cloud-based Systems
- Distributed Systems

#### Track coordinator:

Dr Jacopo Urbani (www.jacopourbani.it/)





## Track: Parallel Computing Systems (30 EC)

#### Track theme:

 Large-scale parallel computing (clusters, grids, clouds, mainframes)

#### Track core:

- Parallel System Architectures
- Programming Large-scale Parallel Systems
- Parallel Programming Practical
- Programming Multi-core and Many-core Systems
- Performance Engineering

#### Track coordinator:



► (For now) Dr Jacopo Urbani (www.jacopourbani.it/)



## Track: Software Engineering and Green IT (30 EC)

#### Track theme:

 Systematic and quantifiable approaches to the development, execution and maintenance of software

#### Track core:

- Service Oriented Design
- Software Asset Management
- ► Green Lab
- Software Architecture
- Software Testing

#### **Track coordinator:**



Prof.dr Patricia Lago
 (www.s2group.cs.vu.nl/people/patricia-lago/)



## **Looking Beyond your Track**

### Ensuring the breadth of each individual study program

### Constrained choice modules (12–18 EC):

- One course on foundations
- One course on software engineering
- One course on programming
- One course on mathematics
- ► Each to be chosen from a predefined set of choices
- ▶ Partially covered by the chosen track's core





#### Free Choice Courses

## Free Choice (30–36 EC):

- Courses from other tracks (pre-approved)
- Other courses from constrained choice packages (pre-approved)
- ► Any course from your track's pre-approved list of suggestions
- Any other course (Master-level) from Computer Science, Computational Science, Logic, Artificial Intelligence, or Bioinformatics (to be approved by exam committee)





## YOU decide about much of the study programme

### Want to go to industry?

Do your graduation project as an internship with a company

### Want to go for a PhD / more ambitious job ?

- It is possible to combine
  - literature study
  - individual project
  - graduation project

to a larger scientific research project (up to 42 EC)





## **Admission to the Programme**

### For university students

- BSc degree in Computer Science or Informatica (or closely related subject)
- ▶ Other degrees: individual assessment

#### For HBO students

- BSc degree in Informatica (or closely related subject)
- Individual assessment of strengths and deficits
  - Additional courses from our BSc/MSc programmes as necessary





## Why you should join the VU/UvA Master in Computer Science

### Some good reasons:

- VU and UvA are among the top universities in Europe
- Learn from renowned scientists
- Small student groups, staff is easily accessible
- Wide choice of courses
- Become part of a research group for your graduation project
- Modern state-of-the-art facilities
- International environment at home
- Excellent job market for graduates (academia or industry)
- Get two universities for the price of one





### The End — links and more information

www.vu.nl/ma-computerscience

### Programme director:

Prof.dr Wan Fokkink (www.cs.vu.nl/~wanf/)

#### **UvA** contacts:

- For BDE: dr Adam Belloum (aszbelloum.wixsite.com/aszbelloum)
- General and for FCC: dr Alban Ponse (staff.fnwi.uva.nl/a.ponse/)

These slides: my home page - MSc Computer Science (slide deck)



