

# UvA Master's Evening February 13, 2020

## — Computer Science —

A Joint Master Degree offered by:



UNIVERSITY OF AMSTERDAM



February 13, 2020



## Your hosts today:

- ▶ **Marco Brohet**  
Master 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 ?



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UNIVERSITY OF AMSTERDAM

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**Two universities  
for the price of one !!**



## 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 . . .



## 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  
(<https://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
- ▶ Advanced Operating Systems
- ▶ Distributed Algorithms

### Track coordinator:

- ▶ Prof.dr. Herbert Bos  
([www.vusec.net/people/herbert-bos/](http://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/](http://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/](http://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/](http://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/](http://www.s2group.cs.vu.nl/people/patricia-lago/))



## 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 (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](http://www.vu.nl/ma-computerscience)

### Programme director:

- ▶ Dr.ing. Thilo Kielmann  
(<https://research.vu.nl/en/persons/thilo-kielmann>)

### UvA contacts:

- ▶ For BDE: dr. Adam Belloum  
(<https://aszbelloum.wixsite.com/aszbelloum>)
- ▶ General and for FCC: dr. Alban Ponse  
(<https://staff.fnwi.uva.nl/a.ponse>)
- ▶ For questions to Marco: ([marco@brohet.net](mailto:marco@brohet.net))



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

