UvA Master's Day November 9, 2019

— Computer Science —

A Joint Master Degree offered by:

November 9, 2019

UvA Master's Day November 9, 2019: Computer Science

Your hosts today:

- **Stephen Swatman**
  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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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 (`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
- 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:

- 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 Stephen: (stephen.swatman@student.vu.nl)

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