UvA Master’s Day November 9, 2019

— Computer Science —

A Joint Master Degree offered by:

VU VRIJE UNIVERSITEIT AMSTERDAM

UNIVERSITY OF AMSTERDAM

November 9, 2019
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?

VU + University of Amsterdam

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