

COMPUTER SCIENCE

MASTER

EPFL



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The Master's program in Computer Science offers a unique choice of courses ranging from foundations of computer sciences, software and computer systems to big data and construction of software. It also includes emerging disciplines such as Biocomputing.



© FarmBook

A cell phone application enables Indian farmers to better negotiate the sale of their harvests

Jean-Philippe Pellet:

"I cofounded, with two EPFL classmates and friends, a software company, Wizzy Education Technologies. Making our own company work is a promising challenge."

What is the current market price of rice or peanuts? These are crucial questions that Indian farmers ask themselves. However, many of these farmers cannot read or write. With their cell phone, they can nevertheless connect to one another and exchange this information thanks to Farmbook, which uses icons and a text-to-speech system. "Sharing this information places them in a position of strength during negotiations!", adds Oscar Bolaños, the student involved in this project.

Discover the whole story:

<http://actu.epfl.ch/news/an-app-to-re-empower-farmers-2/>



Read more:



Are you ready for a new generation of personal coaches?

Who has never dreamed of having a personal lifestyle coach? This is the challenge taken up by Danni Le, Javier Martin de Valmaseda and Loya Aniruddha. "Did you know that you can be more productive by taking a break?" "How about contacting a friend?" "Maybe you should drink a glass of water or stretch your neck before you go on?" To have trustworthy results, two different sensors and a smartphone are used. They are worn around the wristband to measure electric impulses and skin temperature. Combined, the data help to determine what mood you are in.

Discover the whole story:

<http://actu.epfl.ch/news/are-you-ready-for-a-new-generation-of-personal-coa/>



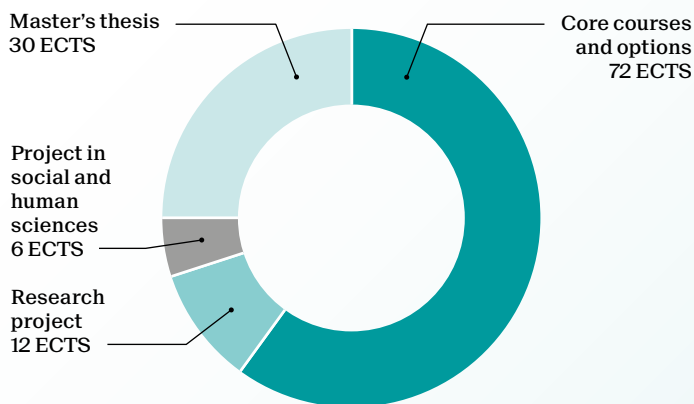
*Laetitia Henriot:
"My contract was signed even before finishing my Master in Computer Science. I started my career as a consultant in Zurich. After two years in projects development, I am now directing a strategic project."*



© Danni Le

Master of Science in COMPUTER SCIENCE

2-year program - 120 ECTS



The program includes a compulsory internship of eight weeks during the summer, or six months during the semester. The internship can also be combined with the master's thesis.

Students may choose a 30 ECTS specialization in:

- A Computer engineering
- B Data analytics
- C Foundations of software
- D Cyber security
- E Networking and mobility
- F Signals, images and interfaces
- G Software systems
- H Wireless communications
- I Computer science theory
- J Internet information systems

They may also opt for a Teaching specialization (30 ECTS at the *Haute école pédagogique du canton de Vaud*).

Or choose a 30 ECTS minor included in the 120 ECTS.

Career prospects

The internship portal, with more than 3000 active contacts, is a very effective way to promote internships and master projects. All the big companies are listed, but not only. There are many SMEs and start-ups too. The EPFL Innovation Park, a few steps away from the campus, hosts many R&D laboratories such as Cisco, Logitech, or Swisscom. These companies hire a large number of Computer Science students for internships or master's projects and also collaborate with researchers from the IC School.

The EPFL Innovation Park is the springboard for numerous start-ups, most of which have emerged from the IC School.

It only takes on average 7 weeks to find one's first job. Moreover, many Computer science graduates receive a job offer during the last semester of their training. Companies such as Oracle, Google, Meta, or Microsoft recruit directly on campus by participating in various events.

School of Computer and Communication Sciences
go.epfl.ch/master-computer-science
contact: eileen.hazboun@epfl.ch

	Specialization										Credits
	A	B	C	D	E	F	G	H	I	J	
Core courses (min. 32 credits)											
Algorithms II		B	C	D	E				I		8
Advanced computer architecture	A			D			G				8
Cryptography and security				D	E					J	8
Decentralized systems engineering							G				8
Distributed algorithms			C		E		G		I	J	8
Information security and privacy		B		D	E		G				8
Machine learning		B				F			I	J	8
Modern natural language processing		B								J	8
Systems for data management and data science		B	C				G			J	8
TCP/IP networking				D	E		G	H			8

Options	A	B	C	D	E	F	G	H	I	J	
Advanced compiler construction	A		C				G				6
Advanced computer graphics						F					6
Advanced cryptography				D							6
Advanced multiprocessor architecture	A						G				6
Advanced probability and applications		B						H	I		8
Advanced topics on privacy enhancing technologies				D							8
AI product management											6
Applied biomedical signal processing						F					4
Applied biostatistics											5
Applied data analysis		B									8
Artificial neural networks/reinforcement learning											6
Automatic speech processing						F					3
Basics of mobile robotics											4
Bioimage informatics						F					4
Causal inference											4
Causal thinking											5
Cellular biology and biochemistry for engineers											4
Computational complexity		B							I		6
Computational neuroscience : neural dynamics											5
Computational photography						F					6
Computer vision						F					6
Computers and music						F					6
Concurrent computing			C				G		I		6
Data visualization		B									6
Deep learning						F					4
Deep learning in biomedicine											6
Design technologies for integrated systems	A										6
Digital education											6
Distributed information systems		B			E				J		6
Distributed intelligent systems	A										5
Dynamical system theory for engineers											6
Embedded system design	A										6
Ethics and law of AI											4
Experience design						F					6
Formal verification	A		C	D							6
Foundations of probabilistic proofs				D					I		6
Foundations of software			C				G				6
Geometric computing						F					6
Gödel and recursivity									I		5
Image processing I, II						F					6
Industrial automation											3
Information theory and coding		B						H	I		8
Intelligent agents										J	6
Interaction design										J	6
Introduction to IT consulting										J	6
Introduction to natural language processing		B								J	6
Learning theory											6
Machine learning for behavioral data											6
Management de projet et analyse du risque											4
Markov chains and algorithmic applications		B							I		6
Mathematical foundations of signal processing						F					6
Mobile networks				D	E		G	H			8
Modern digital communications					E	F		H			8
Networks out of control		B			E			H		J	6
Number theory in cryptography				D							5
Optimization for machine learning											8
Optional research project in computer science											8
Principles of computer systems	A		C	D			G				8
Social media										J	2
Software security				D							6
Statistical physics of computation											4
Statistical signal and data processing through applications		B				F		H			8
Student seminar: security protocols and applications				D							3
Sublinear algorithms for big data analysis									I		6
System programming for Systems-on-chip	A										6
The GC maker project						F					6
Topics in theoretical computer science		B							I		6
Virtual reality						F					6
Visual intelligence: machines and minds						F					6