COMPUTER SCIENCE

MASTER

ÉCOLE POLYTECHNIQUE
FÉDÉRALE DE LAUSANNE

© Alain Herzog

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

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/

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.”

Are you ready for a new generation of personal coaches?

Read more:

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/

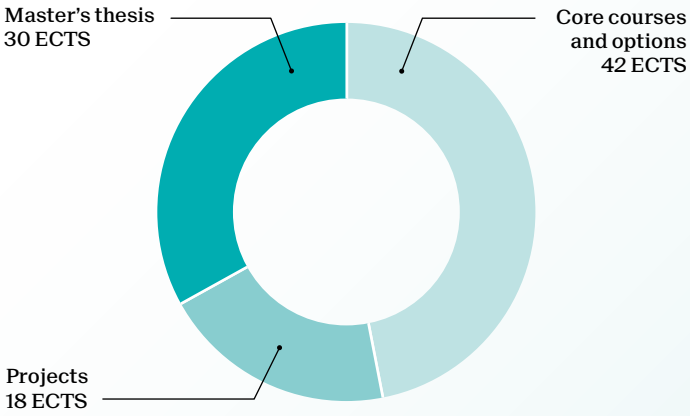
Laetitia Henriot:
“My contract was signed even before finishing my Master in Computer Science. I started my career as a consultant in Zurich. After two years in projects development, I am now directing a strategic project.”

© Danni Le

Master of Science in

COMPUTER SCIENCE

1 1/2-year program - 90 ECTS



The program includes a compulsory 8-week to 6-month internship, which can be combined with the Master's thesis.

Students may also choose to do a 120 ECTS program by adding 30 ECTS either with a Specialization or a Minor.

Students may choose a 30 ECTS Specialization in:

B Foundations of Software
C Signals, Images, and Interfaces
E Internet Computing
F Computer Engineering
G Service Science
H Software Systems
I Information security

Or a 30 ECTS Minor in:

- Biocomputing
- Biomedical Technologies
- Space Technologies
- Management, Technology and Entrepreneurship
- Area and Cultural Studies

Other Minors may be possible, in agreement with the programs' directors.

Career prospects

The EPFL Innovation Park, literally two steps away, is home to numerous R&D laboratories from international companies such as Cisco, Logitech, Credit Suisse or Nitto Denko. Such companies closely collaborate with the researchers from the School of Computer and Communication Sciences IC.
The EPFL Innovation Park is the springboard for plenty of start-ups, most of them stemming from the IC School.

It only takes an average of 10 weeks to find one's first job in the field of Information and Communication Technologies (ICT). Moreover, many graduates in the ICT field receive a job offer during the last semester of their training. Companies like Facebook, Google and Microsoft have even begun recruiting directly on campus.

School of Computer and Communication Sciences
master.epfl.ch/computerscience
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	Specialization							Credits
Core courses (min. 15 credits)	**B**	**C**	**E**	**F**	**G**	**H**	**I**	
Advanced algorithms	B		E				I	7
Advanced computer architecture				F		H	I	4
Cryptography and security			E		G		I	7
Database Systems	B		E			H		7
Distributed algorithms	B		E					4
Distributed information systems			E		G			4
Foundations of software	B							4
Information theory and coding								7
Pattern classification and machine learning		C						7

Options	**B**	**C**	**E**	**F**	**G**	**H**	**I**	
Advanced compiler construction	B					H		4
Advanced computer graphics		C						4
Advanced multiprocessor architecture				F		H		6
Advanced probability and applications								6
Analytic methods in algorithms and complexity								4
Audio signal processing and virtual acoustics		C						4
Automatic speech processing		C						3
Biological modeling of neural networks								4
Biomedical signal processing		C						6
Business Design for IT services					G			3
Cellular biology and biochemistry for engineers								4
Color reproduction		C						4
Computational molecular biology								5
Computational photography		C						5
Computer vision		C						4
Concurrent algorithms	B					H		4
Convex optimization and applications								4
Design technologies for integrated systems				F				6
Digital 3D Geometry Processing		C						5
Digital education & learning analytics								4
Discrete computational geometry								4
Distributed intelligent systems				F				4
Dynamical system theory for engineers								4
Embedded systems				F				4
Enterprise and service-oriented architectur			E		G			6
Gödel and recursivity								5
Human-computer interaction			E		G			4
Image and video processing		C						6
Image processing I, II		C						6
Industrial automation								3
Intelligent agents			E		G			6
Introduction to natural language processing			E					4
Mathematical foundations of signal processing		C						6
Microelectronics for systems on chips				F				4
Mobile networks			E			H	I	4
Model-based system design	B							4
Networks out of control			E					4
Optional project in computer science								8
Performance evaluation	B		E			H		7
Personal interaction studio		C						6
Principles of computer systems	B							7
Program parallelization on PC clusters								4
Random walks								4
Real-time embedded systems				F				4
Real-time networks								3
Sensors in medical instrumentation		C						3
Set theory								5
Smart grid technologies								5
Social Media			E					2
Software-defined radio: A hands-on course		C						5
Statistical neurosciences								4
Statistical signal and data processing through applications		C						5
Synthesis, analysis and verification	B			F				6
TCP/IP Networking						H	I	5
Technology Ventures in IC								4
Topics in Theoretical Computer Science								4
Unsupervised and reinforcement learning in neural networks								4
Virtual reality		C						4

Projects								18
Project in computer science II								12
Project in human and social sciences								6