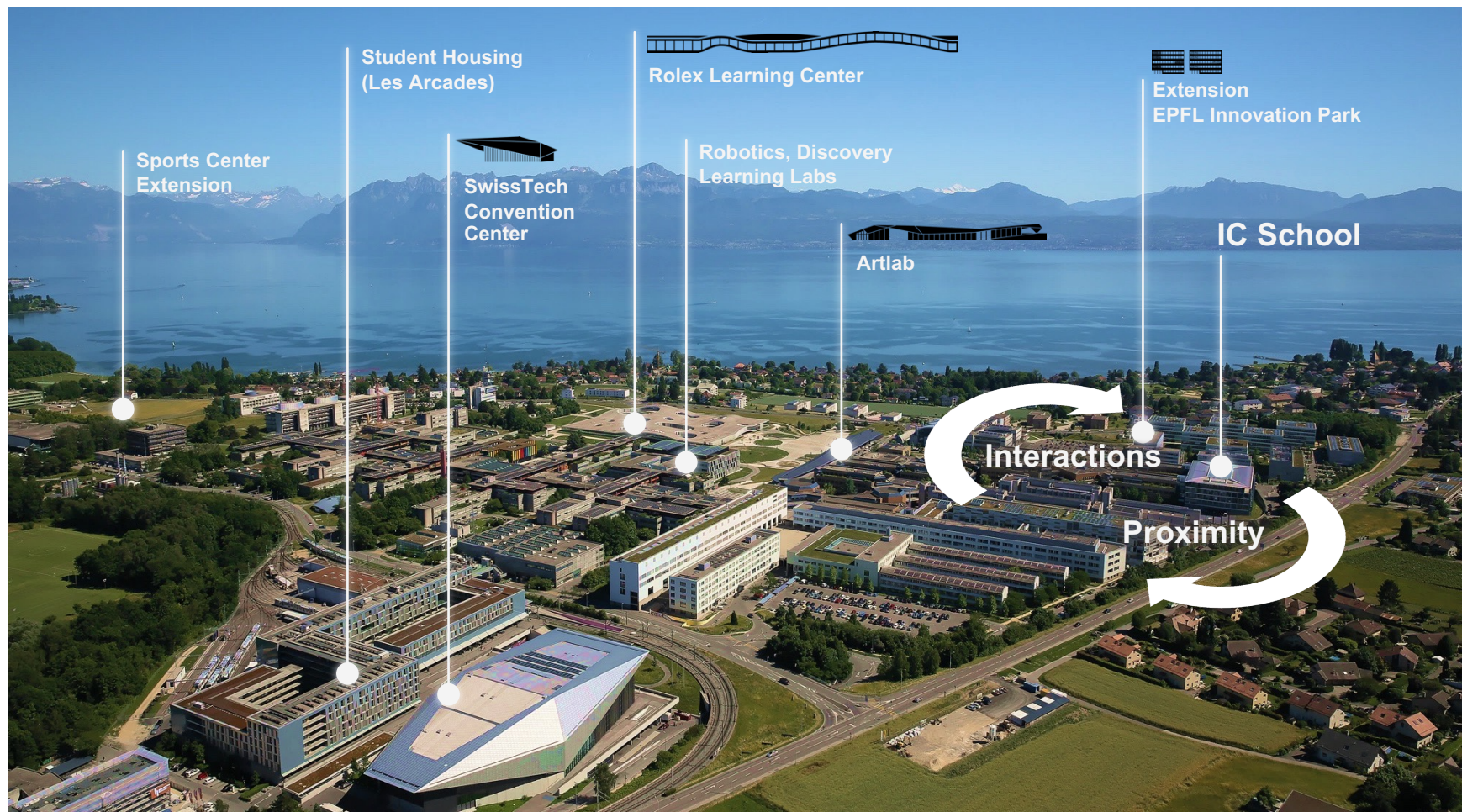


EDIC: PhD Program @ IC

Prof. Michael
Kapralov
EDIC Admission
Chair

October 28, 2025





A vibrant campus



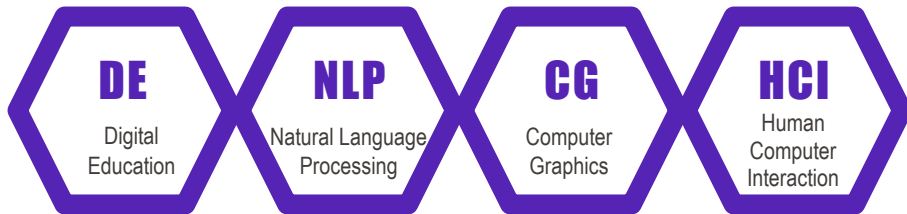


School of Computer and Communication Sciences - IC

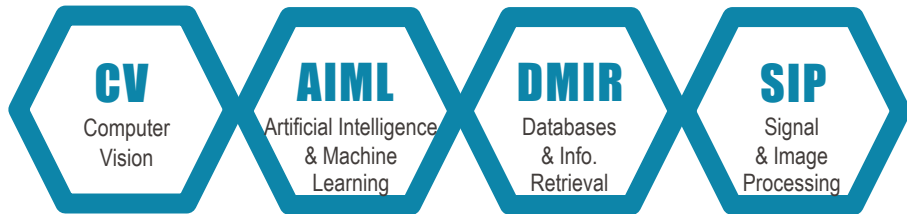
- Internationally highly ranked
- 57 Professors + 2 new hires: S&P and OSNET
- From peer schools (e.g., Berkeley, CMU, Cornell, MIT, Stanford, ...)
- Internationally recognized (e.g. US Academies, top ACM Fellows in Europe/UK)
- Strong industrial liaison
- Theoretical approaches to interdisciplinary applications of AI, data science, computer systems, cybersecurity & visual computing

IC at a glance

interfacing with
humans ...



learning from data, extracting
knowledge, transforming data ...



building real
systems, all layers...



theory, foundations,
fundamental limits...



theory, foundations, fundamental limits...

EPFL



Alessandro Chiesa

Hands-on, energetic, perfectionist.

We work on the theoretical foundations and practical realizations of cryptographic proofs. This enables checking the correctness of a computation in zero knowledge, and much faster than re-running the computation.

Learn more on go.epfl.ch/phd-edic

Computation Security
<https://compsec.epfl.ch/>

EPFL



Ola Svensson

Enthusiastic, persistent, happy.

My research interests are in theoretical computer science with a focus on developing new algorithmic techniques with the potential to overcome longstanding barriers for efficient computation.

Learn more on go.epfl.ch/phd-edic

Theoretical Computer Science
<https://theory.epfl.ch/osven/>

theory, foundations, fundamental limits...

EPFL



Lenka Zdeborova

Taming deep learning using physics.

We deploy advanced tools of theoretical physics to study high-dimensional computation problems appearing in statistical inference, learning with deep neural networks or combinatorial optimization.

Learn more on go.epfl.ch/phd-edic

Statistical Physics of Computation

<https://www.epfl.ch/labs/spoc/>

EPFL



Patrick Thiran

Curious, perfectionist, thoughtful.

My interests are in probabilistic and data-driven models of networks and dynamic processes taking place on networks (including learning, inference and optimization).

Learn more on go.epfl.ch/phd-edic

Information and Network Dynamics

<https://indy.epfl.ch/>

EPFL



Mika Göös

Curious, passionate, stubborn.

I'm obsessed with proving impossibility results in theoretical computer science. Can we show a given computational problem simply admits no efficient algorithm?

Learn more on go.epfl.ch/phd-edic

Theoretical Computer Science

<https://theory.epfl.ch/mika/>

theory, foundations, fundamental limits...

Rachid Guerraoui



Passionate, persistent but cool.

I'm interested in the principles of distributed computing with a recent focus on epidemic algorithms, secure distributed machine learning protocols as well as scalable implementations of virtual currencies.

Learn more on go.epfl.ch/phd-edic

Distributed Computing

<https://dcl.epfl.ch/>

Nicolas Macris



Passionate, persistent, loves science.

My research revolves around high-dimensional computation and inference problems. Analogies with statistical mechanics of large numbers of interacting degrees of freedom are at the heart of the methods we use.

Learn more on go.epfl.ch/phd-edic

Statistical Mechanics of Inference in Large Systems

<https://www.epfl.ch/schools/ic/ipg/>

learning from data, extracting knowledge, transforming data ...

EPFL

Nicolas Flammarion



Passionate, perceptive and supportive.

I'm working on developing new algorithmic and theoretical tools to make machine learning more robust and practical. My research interests are at the interface between optimization and statistics.

Learn more on go.epfl.ch/phd-edic

Theory of Machine Learning
<https://tml.epfl.ch/>

EPFL

Martin Jaggi



Likes practical theory and climbing.

We work at the intersection of optimization and deep learning research. For example, collaborative learning methods can enable new applications while preserving privacy with knowledge sharing between machines or humans.

Learn more on go.epfl.ch/phd-edic

Machine Learning and Optimization
<https://mlo.epfl.ch/>

learning from data, extracting knowledge, transforming

EPFL

Sabine Süsstrunk



Curiosity, challenge, aesthetics.

Our research interests are in computational photography and computer vision. Aiming to improve everyone's photographic experience, we develop models, algorithms, and systems that help to understand, process, and measure images.

Learn more on go.epfl.ch/phd-educ

Image and Visual Representation

<https://ivrl.epfl.ch/>

EPFL

Amir Zamir



Anti low-hanging fruit, perfectionist.

Our research is on computer vision, machine learning, and perception-for-robotics. Every day, we ask the questions: how do we enable machines to see the world, understand it, and act in it intelligently, robustly and safely?

Learn more on go.epfl.ch/phd-educ

Visual Intelligence and Learning

<https://vilab.epfl.ch/>

EPFL

Pascal Fua



Pilot, skier and sometime researcher.

Computer Vision fascinates me because trying to emulate the human ability to see is tantamount to trying to emulate the human mind. We are not there by any stretch of the imagination.

Learn more on go.epfl.ch/phd-educ

Computer Vision
<https://cvlab.epfl.ch/>

Building systems, all layers ...



Haitham Al Hassanieh

Persistent, ambitious, intellectually-curious.

My research goal is to connect and sense the world using wireless networks and sensors. I work across the stack from hardware and signal processing to network algorithms, protocols, and applications.

Learn more on go.epfl.ch/phd-edic

Sensing and Networking Systems

<https://sens.epfl.ch/>



Mathias Payer

Capture-the-flag, GeoCaching, nerd.

We research defenses to prohibit exploitation of vulnerabilities and mechanisms to discover software bugs, enabling developers to fix them before they can do harm.

Learn more on go.epfl.ch/phd-edic

HexHive

<https://hexhive.epfl.ch/>

Building systems, all layers ...

Anastasia Ailamaki



Impact-driven with a positive attitude.

We design real-time intelligent systems for data-intensive applications. Our systems learn and adapt to changing workload requirements, while using heterogeneous compute and memory devices.

Learn more on go.epfl.ch/phd-edic

Data-Intensive Applications and Systems
<https://dias.epfl.ch/>

Edouard Bugnion

Impact-oriented, Swiss, multi-tasker.



Interested in operating systems, data center infrastructure (systems and networking), and a bit of computer architecture. I am specifically researching how to make cloud computing more efficient and trustworthy.

Learn more on go.epfl.ch/phd-edic

Data Center Systems
<https://dcs.epfl.ch/>

Paolo Ienne

Passionate about digital hardware and design automation.



Excellent performance in computing systems is the result of a judicious blend of computer architecture, compiler technology, and hardware implementation. I love to play across their boundaries to uncover synergies and explore disruptive ideas.

Learn more on go.epfl.ch/phd-edic

Processor Architecture
<https://lap.epfl.ch/>

Building real systems, all layers ...

EPFL

Babak Falsafi



Inspires to excel, quality over quantity.

We are now in the Post-Moore Era where silicon density no longer doubles every two years. My research centers around holistic post-Moore datacenter design from algorithms to infrastructure with a focus on scalability and sustainability.

Learn more on go.epfl.ch/phd-edic

EPFL

Mirjana Stojilovic



Energetic, inquiring, supportive.

My research interests lie in field-programmable technology and electronic design automation, with increasing focus on the hardware security vulnerabilities of today's heterogeneous and intelligent computing systems.

Learn more on go.epfl.ch/phd-edic

Parallel Systems Architecture

<https://parsa.epfl.ch/>

<https://people.epfl.ch/mirjana.stojilovic>

Building real systems, all layers ...

Anne-Marie Kermarrec



Creative, visionary, and energetic.

My interests are in large-scale distributed systems with a focus on designing privacy-aware, efficient and sustainable machine learning systems.

Learn more on go.epfl.ch/phd-edic

Scalable Computing Systems

<https://www.epfl.ch/labs/sacs/>

Sanidhya Kashyap



Avid, resolute, and thoughtful.

My research interests are broadly in the area of systems with a particular focus on designing scalable, concurrent, and robust systems software for evolving heterogeneous machines.

Learn more on go.epfl.ch/phd-edic

Robust Scalable Systems Software

<https://rs3lab.github.io/>

Interfacing with humans ...

Wenzel Jakob



Hands-on advising style, likes to build things that work and are used by others.

My vision is to create robust and efficient algorithms that simulate light in a differentiable manner to solve inverse problems in computer graphics and beyond.

Learn more on go.epfl.ch/phd-edic

Realistic Graphics

<http://rgl.epfl.ch/>

Mark Pauly



Creative, curious, passionate.

Our research aims to empower creators. We develop efficient simulation and optimization algorithms to build computational design methodologies for advanced material systems and digital fabrication technology.

Learn more on go.epfl.ch/phd-edic

Geometric Computing

<https://gcm.epfl.ch/>

Interfacing with humans ...



Antoine Bosselut

Empathetic, imaginative, enthusiastic.

My group designs natural language systems that can represent and reason about human and world knowledge.

Learn more on go.epfl.ch/phd-educ

Natural Language Processing

<https://nlp.epfl.ch/>

Tanja Käser



Enthusiastic, perfectionist, wants to have an impact on society.

My research interests are at the interface of machine learning and education. I'm working on developing novel models and algorithms which will help understand and improve human learning.

Learn more on go.epfl.ch/phd-educ

Machine Learning for Education

<https://ml4ed.epfl.ch/>



Robert West

Data is beautiful!

In the Data Science Lab, we distill data into insights by building and using tools in NLP, applied machine learning, and computational social science.

Learn more on go.epfl.ch/phd-educ

Data Science

<https://dlab.epfl.ch/>

EPFL IC research centers



Center for Digital Trust



Scala Center



EcoCloud



Swiss Data Science Center



Center for Quantum Science and Engineering

Why do a PhD?

- PhD is about where the CS revolution is going, and how you can be at the center of it all
- You should consider a PhD if you want
 - Be an academic
 - Take leadership positions in industry R&D
 - Preparation for a startup

Who should do a PhD?

- Fascinated by CS and have an aptitude for science and engineering
- Passionate about understanding how and why things work, the underlying fundamentals
- Want the breadth and depth for a vision to have an impact and make a difference

Profile

- 4- or 5-year Bachelor or Master degree
- Rigorous background in computer science, communication systems, electrical engineering, mathematics, physics and/or related fields
- Highly motivated, exceptional students who are passionate about scientific research



EDIC doctoral program

go.epfl.ch/phd-edic

In a nutshell

- 4-6 years duration, in English
- Competitive salary (~CHF 55k/y)
- Award winning faculty and students
- Strong industrial liaison

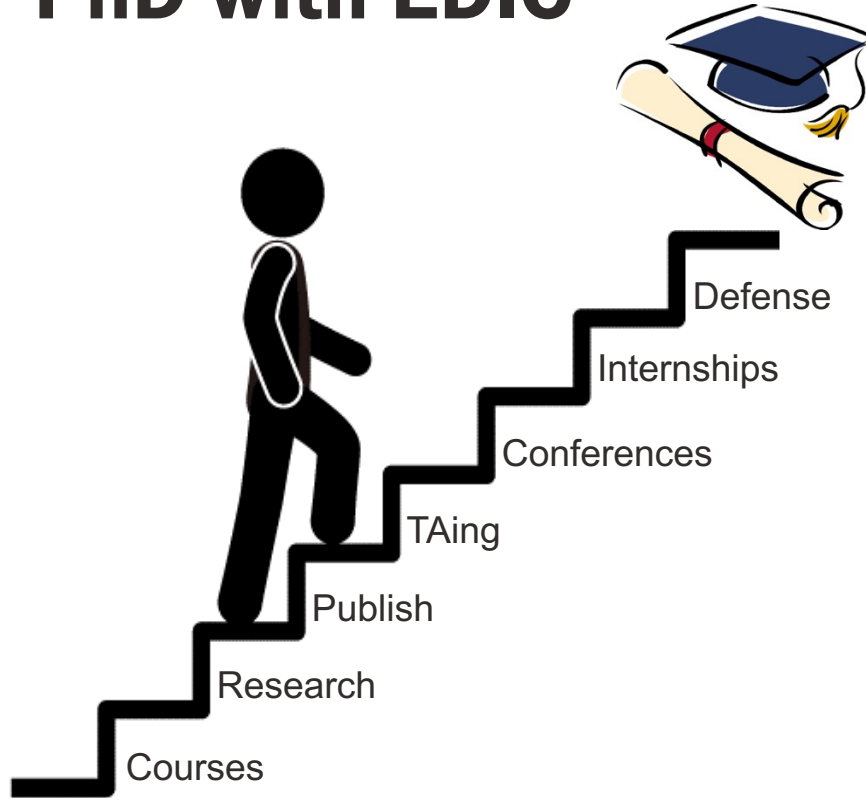
In numbers

- 310 PhDs, among campus largest
- >90% international students
- 55-65 join per year
- ~5 PhD students per faculty

EDIC doctoral program

- Similar to the US doctoral programs; doctoral students do not apply directly to a professor, but to a program.
- Admission is evaluated by a committee of professors from different areas of computer sciences with the goal of recruiting the best candidates.
- The top students selected by the committee receive an IC school fellowship that covers their first year.
- This system is particularly valuable if you are interested in multiple research areas and would like to experiment and gain further experience before committing to a concrete path.
- Multiple rotations are encouraged but not a firm requirement (in case you are only interested in a single lab).

Your path to a PhD with EDIC



During your PhD with EDIC

- **You have an advisor(s)**
 - With you until defense
 - Courses, research, career planning
 - Annual feedback (evaluations)
- **You have a mentor**
 - Program committee contact person + a “buddy” (senior PhD)
 - Faculty member beyond (from outside area)
 - Someone to talk to in general

Your first year with EDIC ...

PhD Orientation (1 week)

September	Administrative tasks Research seminars Social events Matching process *
Early-September	Semester start

* fellowship students

First Year (Fellowship & Direct Hires)

Fall Semester	First project Depth course \$ Potential matching *
Spring Semester	Second project Candidacy exam
	Definitive matching *

* fellowship students

\$ EPFL MS can get a waiver

EPFL EDIC graduation requirements: 30 credits

	PhD Students without an EPFL MS	Credits	PhD Students with an EPFL MS	Credits
Year 1 of PhD	Semester project (fall)	6	Semester project (fall)	6
	Semester project (spring)	6	Semester project (spring)	6
	Depth Course [x 1] ^a	min. 6	Depth course ^{a; c}	---
			Breadth [x 1] ^{b; c}	min. 4
	Credits - 1st Year	min. 18	Credits - 1st Year	min. 16
Year 2 onwards	Breadth Courses [x 2] ^b	min. 8	Breadth course [x1] ^{b; c}	min. 4
	EDIC course catalogue or other MS/doctoral courses	min. 4	EDIC course catalogue	min. 6
			Other MS/doctoral courses	max. 4
	Credits - 2nd Year onwards	min. 12	Credits - 2nd Year onwards	min. 14
30 Credits				

- a) All PhD students are required to choose a depth area: Theory & Foundations, Core AI, Systems, Visual computing, Data, Security. The passing grade for the depth course is 5.0 or better. Students have 2 attempts (fall and spring) to pass their depth course. Retake of the same course is not possible; a different course must be chosen.
- b) Two other areas outside the depth area are defined as breadth. PhD students must take one breadth course of min. 4 credits in each of the two areas.
- c) EPFL MS students who have obtained a grade of 5.0 in one of the depth courses prior to enrolling in EDIC have fulfilled the depth course requirement. Breadth requirements can be waived in the same way.

EPFL EDIC PhD students intern *40 internships average per year*

Industry

- Adobe
- Amazon
- Apple
- Bloomberg
- Bosch
- DeepMind
- Disney Research
- Google
- HP
- Huawei
- IBM
- Intel
- Meta
- Microsoft
- Mozilla
- Natunix
- NEC

Industry (cont.)

- Neovision
- NVIDIA
- Nokia
- Nutanix
- Oracle
- OrbiWise
- Qualcomm
- SAP
- Synopsis
- Swisscom
- Technicolor
- Uber
- VMWare
- Walt Disney
- X
- Xilinx
- Yandex

Universities

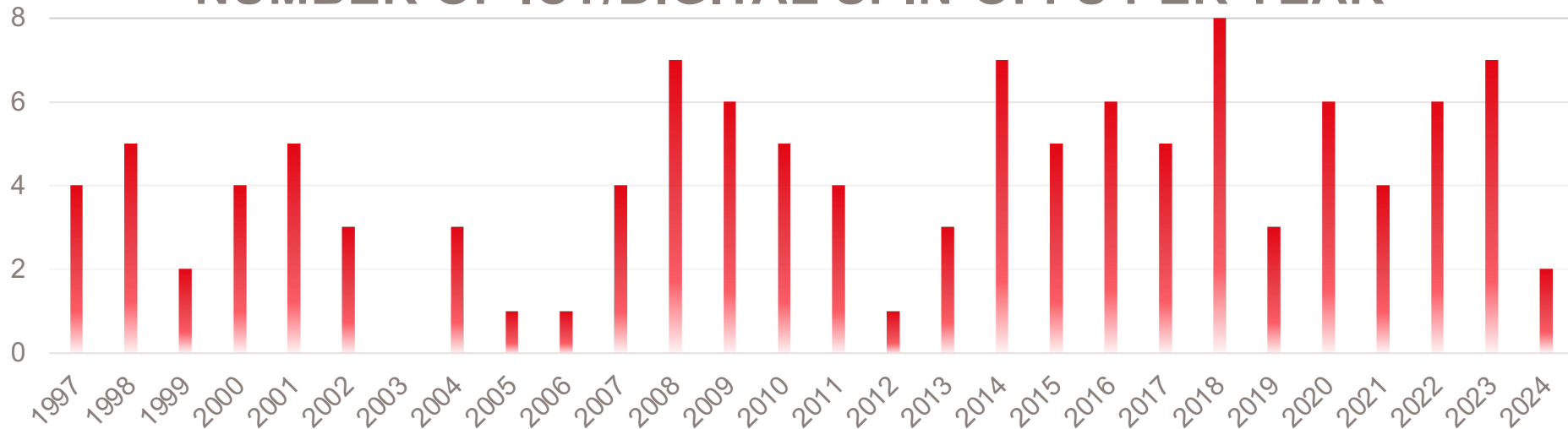
- Berkeley
- CMU
- Cornell
- ETHZ
- Haifa U.
- Harvard
- HKUST
- INRIA
- MIT
- NUS
- NYU
- Queensland U.
- Stanford
- Toronto U.
- UIUC
- Vienna U.
- Washington U.

EDIC PhD & Fellowships Laureates 2021-2024



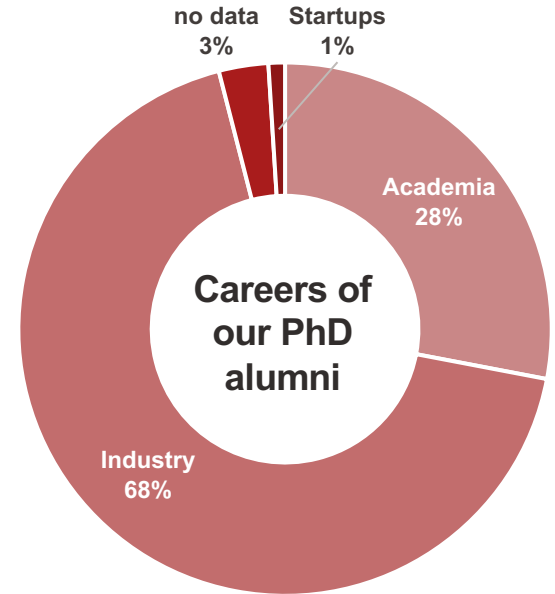
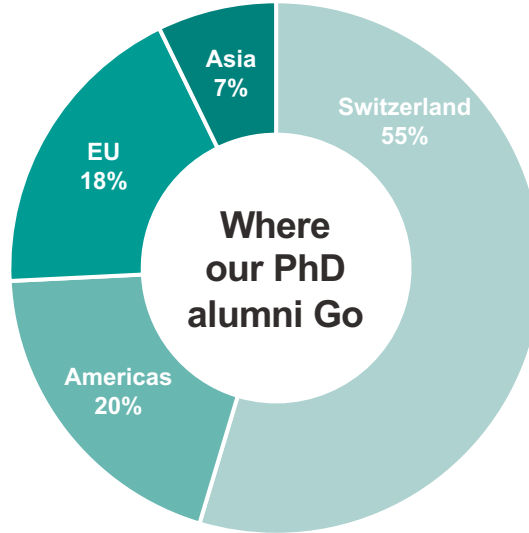
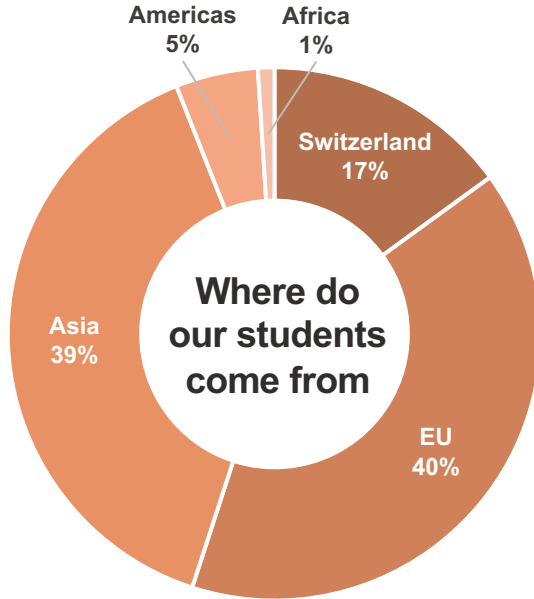


NUMBER OF ICT/DIGITAL SPIN-OFFS PER YEAR



EPFL EDIC Graduates: From where to where?

1023 graduates 2008-present



Some EDIC alumni in academia



Nada Amin

Assistant Professor,
Harvard



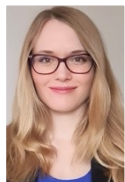
Alexandros Daglis

Assistant Professor,
Georgia Tech



**Manoel Horta
Ribeiro**

Assistant Professor,
Princeton



Lana Josipović

Assistant Professor,
ETHZ



Baris Kasikci

Associate Professor,
Washington



Heather Miller

Assistant Professor,
Carnegie Mellon



Ayfer Ozgur

Associate Professor,
Stanford



Ruzica Piskac

Associate Professor,
Yale



**Mina Konakovic-
Lukovic**

Assistant Professor, MIT



Immanuel Trummer

Assistant Professor,
Cornell



Manos Athanassoulis

Assistant Professor,
Boston



Marios Kogias

Assistant Professor,
Imperial College

EPFL Inspiring journeys: a selection of EDIC alumni

EPFL



Marco Mondelli

PROFESSOR, INSTITUTE OF SCIENCE AND TECHNOLOGY AUSTRIA
CLASS OF 2018 - SUPERVISED BY PROF. RÜDIGER URBANE

"EPFL has shaped the way I think about research problems, making me the researcher I am today and allowing me to find my own voice and style. I am really grateful for that!"

What are you currently working on?
"The increasing popularity of large-scale machine learning models presents both opportunities and challenges, and my research seeks a principled understanding of how they work."

LEARN MORE ON [GO.EPFL.CH/PHD-EDIC](https://go.epfl.ch/phd-edic)

EPFL



Aida Mousavifar

SENIOR RESEARCH ENGINEER, GOOGLE (SWITZERLAND)
CLASS OF 2021 - SUPERVISED BY PROF. MICHAEL KAPRALOV

"Collaborating with talented colleagues sharpened my skills, and working on high-impact projects with strong mentorship during my time at EDIC opened valuable career opportunities."

What are you currently working on?

"My research focuses on improving the factuality of LLMs and addressing model hallucinations for large-scale applications such as Gemini and AI Mode at Google. This is an exciting and challenging domain at the intersection of AI safety, reasoning and knowledge representation to minimize misinformation and enhance reliability."

LEARN MORE ON [GO.EPFL.CH/PHD-EDIC](https://go.epfl.ch/phd-edic)

EPFL



Dina Mahmoud

ASSISTANT PROFESSOR, THE AMERICAN UNIVERSITY IN CAIRO (EGYPT)
CLASS OF 2024 - SUPERVISED BY PROF. BABAK FALSANI AND MIRJANA STOJILJIC

"EDIC is very selective of its students which meant I was constantly working with peers of the highest calibre. This made me try to do my best all the time. My supervisors also pushed me to develop my skills in research, teaching, networking and time management — skills that I use everyday."

What are you currently working on?
"I am currently working on integrating reliability and security into open-source hardware design tools."

LEARN MORE ON [GO.EPFL.CH/PHD-EDIC](https://go.epfl.ch/phd-edic)

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→ [icepfl](https://icepfl.com)

EPFL



Himanshu Verma

ASSISTANT PROFESSOR, DELFT UNIVERSITY OF TECHNOLOGY (NETHERLANDS)
CLASS OF 2016 - SUPERVISED BY PROF. PIERRE DILLENBOURG

"EDIC played a monumental role in my academic growth, nurturing an interdisciplinary mindset, asking relevant questions about socially important problems, and daily learning through collaboration with diverse, talented peers."

What are you currently working on?
"LLM-powered conversational agents increasingly shape human decisions, often with manipulative effects. My research designs interventions to mitigate these risks."

LEARN MORE ON [GO.EPFL.CH/PHD-EDIC](https://go.epfl.ch/phd-edic)

EPFL



Oguzhan Kar

MACHINE LEARNING RESEARCHER, APPLE (SWITZERLAND)
CLASS OF 2025 - SUPERVISED BY PROF. AMIR ZAMIR

"I loved the endless discussions with labmates and PhD colleagues on virtually everything, from the latest papers and hottest research topics to history, philosophy, and even cooking recipes."

What are you currently working on?

"My research focuses on multimodal AI, building models that reason across images, video, text, and 3D data to tackle real-world problems. Recently, I've been especially interested in AI agents that can plan and act autonomously."

LEARN MORE ON [GO.EPFL.CH/PHD-EDIC](https://go.epfl.ch/phd-edic)

EDIC Admission Cycles

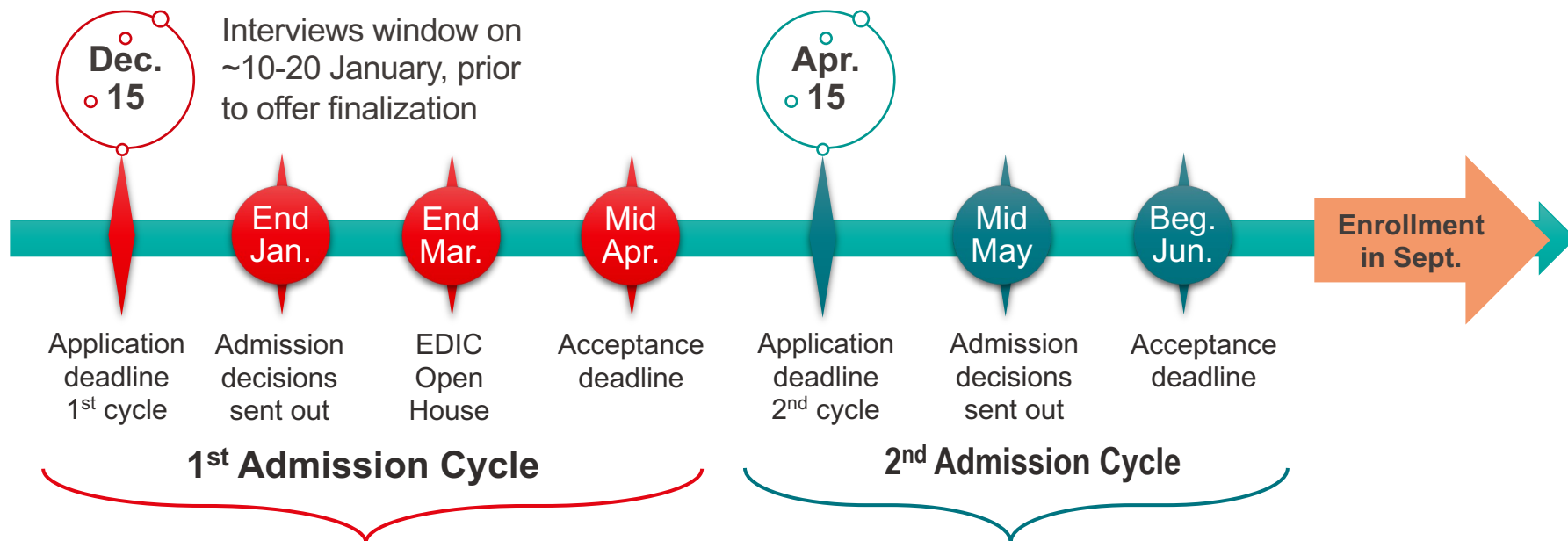
go.epfl.ch/phd-edic

- **1st admission cycle**
 - **deadline December 15**
 - Main admission cycle
 - Synchronized with US/Canada
 - Attend the Open House in Spring
 - **Apply NOW!**
- **Smaller 2nd admission cycle**
 - **deadline April 15**
 - Fewer applications, fewer admissions
 - Synchronized with Europe
 - Will not get a chance to visit the Open House



EDIC Application Timeline

go.epfl.ch/phd-edic



- Approx. 1300 applications over both rounds
- Enroll roughly 50-55 (approx. 20% from EPFL MS)
- Accept the top ~45 ranked as fellowship (approx. 20% from EPFL MS)

EDIC Application Process

go.epfl.ch/phd-edic

- See the EDIC webpage for specific requirements.
- Go through IC faculty webpages to carefully identify the research areas and the professors that are of most interest to you. You will need to include this information in the application form
- Write a Statement of Purpose (SoP). Document clearly your reasons for wishing to do a doctoral thesis with EDIC, whom you would like to work with and explain longer-term professional goals.
- Find 3 referees. Ideally, the letters should be from professors or people with whom you have collaborated, and who can comment on your ability to do research. Make sure that the **letters are submitted by the application deadline.**

EPFL EDIC Application:

Scientific interests

- **You get to pick at least 1, and up to 3 research areas**
 - Your 1st choice of area will be indicative of the pool of students reviewed by the pertinent faculty
- **You can indicate 1 to 5 names of faculty you would like to work with**
 - Each professor has a subset of areas of expertise, make sure to align one another
 - You might indicate having already been in contact with professors. It doesn't impact positively or negatively your application

EPFL **EDIC Application:**

Writing your SoP ...

- **First paragraph**

- Describe the general areas of research that interest you and why

- **Second to fourth paragraph**

- Describe some research projects that you worked on. What was the problem you were trying to solve? Why was it important? What approaches did you try? What did you learn? It's fine to say that you were unable to fully solve your problem

- **Fifth and sixth paragraph**

- Tell us a little bit about yourself and your life experiences. Why do you feel you need a PhD? Why is EDIC the right place for you? Whom would you like to work with?

EPFL EDIC Application: Reference letters

- **You need to indicate 3 contact information for reference letters**
 - Use institutional email address
 - After validation of the application, the system will invite them to submit their recommendation
 - The process is entirely electronic and confidential
- **The deadline is the same as the application (Dec 15 or April 15)**
 - Validate your application early enough to allow referees the time to submit their letter



In conclusion ...

- Rich intellectual environment, with international access
- World-renowned faculty to collaborate with
- Generous resources and rich network of academic and industrial partners
- Value close interaction between students and faculty within a flat organization structure
- Access to stellar international careers as academics, scientists, and entrepreneurs

Need more information ...
go.epfl.ch/phd-edic
edic@epfl.ch

