A vibrant campus
School of Computer and Communication Sciences - IC

- Internationally highly ranked
- 55 Professors + 3 new hires in 2022-23: Systems, ML
- 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
- Information theory to datacenters
IC at a glance

theory, foundations, fundamental limits…

learning from data, extracting knowledge, transforming data …

building real systems, all layers…

interfacing with humans …
theory, foundations, fundamental limits...

Statistical Physics of Computation
http://artax.karlin.mff.cuni.cz/~zdebl9am/

Distributed Computing
https://dcl.epfl.ch/

Theoretical Computer Science
https://theory.epfl.ch/mika/

Theoretical Computer Science
https://theory.epfl.ch/osven/
learning from data, extracting knowledge, transforming data ...
Building systems, all layers ...

HexHive
https://hexhive.epfl.ch/

Security and Privacy Engineering
https://www.epfl.ch/labs/spring/

Data-Intensive Applications and Systems
https://www.epfl.ch/labs/dias/

Integrated Systems
https://www.epfl.ch/labslsi/
Building real systems,
all layers ...

Parallel Systems Architecture
https://parsa.epfl.ch/
https://people.epfl.ch/mirjana.stojilovic

Robust Scalable Systems Software
https://sanidhya.github.io/

Scalable Computing Systems
https://www.epfl.ch/labs/sacs/
Interfacing with humans ...

Sabine Süssstrunk
Currently challenge aesthetics.

My research interests are in computational photography and computer vision. Aiming to improve everyone’s photographic experience, my lab develops models, algorithms and systems that help to understand, process, and measure images.

Learn more on google/chrome editor. Application deadline: December 5, 2020.

Realistic Graphics
http://rgl.epfl.ch/

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 google/chrome editor. Application deadline: December 5, 2020.

Geometric Computing
https://gcm.epfl.ch/

Mark Pauly
Geometry, Computation, Making

My research combines geometric reasoning, physics-based simulation and efficient optimization to explore new computational design methodologies for digital fabrication.

Learn more on google/chrome editor. Application deadline: December 5, 2020.

Visual Intelligence and Learning
http://vilab.epfl.ch/zamir/

Amir Zamir
Anti-fanatical fruit, perfectionist.

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

Learn more on google/chrome editor. Application deadline: December 5, 2020.

Image and Visual Representation
https://www.epfl.ch/labs/ivrl/
Broad impact on computer science

NeurIPS 2021
IC research centers

- Swiss Data Science Center
- Center for Digital Trust
- CIS Center for Intelligent Systems
- Center for Quantum Science and Engineering
Why a PhD?

- PhD is about where the IT 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 IT 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
In a nutshell

- 4-6 years duration, in English
- Competitive salary (~$50k/y)
- Award winning faculty and students
- Strong industrial liaison

In numbers

- 310 PhDs, among campus largest
- 90% international students
- 50-60 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” (older PhD)
  - Faculty member beyond (from outside area)
  - Someone to talk to in general
Your first year with EDIC ...

<table>
<thead>
<tr>
<th>PhD Orientation (2 weeks)</th>
<th>First Year (Fellowship &amp; Direct Hires)</th>
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</thead>
<tbody>
<tr>
<td><strong>September</strong></td>
<td>Fall Semester</td>
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<tr>
<td>(optional French classes)</td>
<td>First project</td>
</tr>
<tr>
<td>Administrative tasks</td>
<td>Depth course $</td>
</tr>
<tr>
<td>Research seminars</td>
<td>Potential matching *</td>
</tr>
<tr>
<td>Social events</td>
<td>Spring Semester</td>
</tr>
<tr>
<td>Matching process *</td>
<td>Second project</td>
</tr>
<tr>
<td>Mid-September</td>
<td>Candidacy exam</td>
</tr>
<tr>
<td>Semester start</td>
<td>Definitive matching *</td>
</tr>
</tbody>
</table>

* fellowship students

* fellowship students

$ EPFL MS can get a waiver
EDIC PhD students intern ~40 internships average per year

<table>
<thead>
<tr>
<th>Industry</th>
<th>Industry (cont.)</th>
<th>Universities</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Adobe</td>
<td>• Neovision</td>
<td>• Berkeley</td>
</tr>
<tr>
<td>• Amazon</td>
<td>• NVIDIAA</td>
<td>• CMU</td>
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<tr>
<td>• Apple</td>
<td>• Nokia</td>
<td>• Cornell</td>
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<td>• Bloomberg</td>
<td>• Nutanix</td>
<td>• ETHZ</td>
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<td>• Bosch</td>
<td>• Oracle</td>
<td>• Haifa U.</td>
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<td>• DeepMind</td>
<td>• OrbiWise</td>
<td>• Harvard</td>
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<td>• Disney Research</td>
<td>• Qualcomm</td>
<td>• HKUST</td>
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<td>• Google</td>
<td>• SAP</td>
<td>• INRIA</td>
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<td>• HP</td>
<td>• Synopsis</td>
<td>• MIT</td>
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<td>• Huawei</td>
<td>• Swisscom</td>
<td>• NUS</td>
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<td>• IBM</td>
<td>• Technicolor</td>
<td>• NYU</td>
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<td>• Intel</td>
<td>• Twitter</td>
<td>• Queensland U.</td>
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<td>• Meta</td>
<td>• Uber</td>
<td>• Stanford</td>
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<tr>
<td>• Microsoft</td>
<td>• VMWare</td>
<td>• Toronto U.</td>
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<tr>
<td>• Mozilla</td>
<td>• Walt Disney</td>
<td>• UIUC</td>
</tr>
<tr>
<td>• Natunix</td>
<td>• Xilinx</td>
<td>• Vienna U.</td>
</tr>
<tr>
<td>• NEC</td>
<td>• Yandex</td>
<td>• Washington U.</td>
</tr>
</tbody>
</table>
EDIC Graduates: From where to where?
647 graduates 2006-2021

Where do our students come from:
- Asia: 32%
- Europe: 44%
- US: 17%
- Switzerland: 18%
- Americas: 5%
- Africa: 1%

Where our PhD alumni Go:
- Switzerland: 55%
- Asia: 7%
- EU: 17%
- US: 21%

Careers of our PhD alumni:
- Academia: 25%
- Industry: 75%
Some EDIC alumni in academia

Nada Amin
Assistant Professor, Harvard

Alexandros Daglis
Assistant Professor, Georgia Tech

Hamed Hassani
Assistant Professor, UPenn

Lana Josipović
Assistant Professor, ETHZ

Baris Kasikci
Assistant Professor, Michigan

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
Positions of EDIC alumni in companies
EDIC Admission Cycles
go.epfl.ch/phd-edic

- 1st admission cycle
  - deadline December 15
    - Main admission cycle
    - Synchronized with US/Canada
    - Visit the OpenHouse 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

Applications due: Dec. 15
Interviews window on 10-18 Jan., prior to offer finalization

Application deadline 1st cycle
Admission decisions sent out
EDIC Open House
Acceptance deadline
Application deadline 2nd cycle
Admission decisions sent out
Acceptance deadline

Enrollment in Sept.

1st Admission Cycle
2nd Admission Cycle

- Approx. 900 applications over both rounds
- Enroll roughly 50-55 (of which 20% from EPFL MS)
- Accept the top ~45 ranked as fellowship (of which 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.
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?
In conclusion ...

- Rich intellectual environment with international focus
- Graduate students collaborate with world-renowned faculty
- Benefit from generous resources and rich network of academic and industrial partners
- Value close interaction between students and faculty within a flat organization structure
- EDIC alumni pursue stellar international careers as academics, scientists, and entrepreneurs
Need more information ...

go.epfl.ch/phd-edic
edic@epfl.ch