ELLIS PHD AND POSTDOC PROGRAM

Information for applicants
2021
01
ABOUT
ABOUT ELLIS

ELLIS – the European Laboratory for Learning and Intelligent Systems – is a European AI network of excellence that focuses on fundamental science, technical innovation and societal impact. ELLIS builds upon machine learning as driving modern AI – inspired by a model of human intelligence which is not ‘programmed’ but which is shaped by and learns from data.

ELLIS aims to benefit Europe in two ways: (1) We want the best basic research to be performed in Europe, to enable Europe to shape how machine learning and modern AI change the world. (2) We want to have economic impact and create jobs in Europe, and believe this is achieved by outstanding and free basic research.

ELLIS UNITS

Highly innovative ecosystems emerge at outstanding academic institutions, which serve as international talent magnets and incubators of innovation. Thus, rather than just building a virtual network amongst institutions, ELLIS is creating new working environments for outstanding researchers to enable them to combine cutting-edge research with the creation of start-ups and industrial impact. ELLIS Units bring together the best AI researchers at their locations and fulfill a set of criteria to ensure excellence and to be maximally competitive at the international level.

PROGRAMS

ELLIS is establishing a European network of top researchers working at locations throughout Europe, who are organized into ELLIS Programs. These Programs focus on high-impact problem areas that have the potential to move the needle in modern AI. Currently, there are 12 ELLIS Programs, ranging in focus from health to computer vision, to earth and climate sciences.

FELLOWS AND SCHOLARS

ELLIS Fellows advance science and act as ambassadors of ELLIS. They provide strategic advice and leadership not just scientifically, but also in terms of how to build and grow a network of excellence. ELLIS Scholars are outstanding junior scientists, often assistant professors, who do not yet have the seniority of a Fellow but are on a clear trajectory to reach this level.
The ELLIS PhD & Postdoc Program supports excellent young researchers across Europe by connecting them to leading researchers and offering a variety of networking and training activities, including boot camps, summer schools and workshops of the ELLIS Programs.

Facilitating collaboration among top talent is part of ELLIS’s DNA: ELLIS PhD students and postdocs are supervised by one ELLIS fellow/scholar and one ELLIS fellow/scholar/member from different, partnering institutions. They conduct cutting-edge, curiosity-driven research in machine learning or related fields and conduct their research at both partner institutions during their appointment.

JOIN ELLIS AND SHAPE THE FUTURE OF AI

What’s in it for you? ELLIS is not only a brand of scientific excellence, it takes the education and training of its junior researchers seriously. ELLIS seeks to attract the world’s brightest minds and helps them become the future leaders in AI. As an ELLIS PhD student or postdoc, you will enjoy the benefits of:

- an international network of over 200 leading machine learning researchers (and growing) in academia and industry
- joint supervision by leading researchers in your field of interest
- collaboration with top research groups
- access to summer schools, bootcamps, networking events and workshops
- funding (through your advisors’ resources) to conduct curiosity-driven fundamental research and to attend conferences
- access to high-end infrastructure
- contributing to society by working on high-impact challenges and developing ethical and trustworthy AI, the trademark for AI “made in Europe”

HOW TO JOIN ELLIS AS A JUNIOR RESEARCHER

Currently, there are two ways to become an ELLIS PhD student or postdoc: via our central application process (deadline once a year in fall, new PhD students) or year-round via a nomination process (PhD students and postdocs who are already working with ELLIS fellows/scholars/members). See next section for details.
Within the ELLIS PhD & Postdoc Program, there are two tracks: the academic track and the industry track. These tracks have separate requirements for admission and criteria for activity during the appointment, but otherwise offer the same benefits, network and resources to the applicant.

The **academic track** is based on a collaboration between 2 top European academic institutions (e.g. universities), with one advisor from each institution supervising the research.

The **industry track** is based on a collaboration between 1 top European academic institution and 1 European industry player (e.g. a university and a company).

**ACADEMIC TRACK**

PhD students and postdocs in the academic track strive for international collaboration as they partner with two European academic institutions in their research. These candidates are supervised by one ELLIS fellow/scholar/unit faculty and one ELLIS fellow/scholar/member, each from different European countries and academic institutions. During their appointment, PhD students and postdocs will visit the secondary partner institution for an extended research stay of at least 6 months, where they will have first-hand access to the facilities and network of the partner.

**INDUSTRY TRACK**

The industry track aims to facilitate collaboration between European academic institutions and industry with the understanding that a vibrant and interactive ecosystem is key to stimulating innovation. Within the industry track, PhD students and postdocs conduct their research in collaboration with an academic institution and an industry partner. They are co-supervised by two advisors, one from each of the partners, and split their time conducting research and working between the two. Beyond the resources of the ELLIS network, industry track PhD and postdocs benefit from practical, first-hand experience working with industry while completing their appointment.

For this track, both advisors may be located in the same country. One advisor will represent the academic institution and the other the industry partner. Both the academic and industry advisor must be ELLIS members and at least one of them a fellow, scholar or unit faculty.
### BOTH TRACKS

<table>
<thead>
<tr>
<th><strong>FOCUS</strong></th>
<th>Emphasis on research excellence and publishing</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ADVISORS</strong></td>
<td>Co-supervision by 1 ELLIS fellow/scholar/unit faculty + 1 fellow/scholar/member(^1)</td>
</tr>
<tr>
<td><strong>SELECTION</strong></td>
<td>Selection procedure defined and overseen by the ELLIS PhD &amp; Postdoc Committee Quality control by the co-supervising parties</td>
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<tr>
<td><strong>PROGRAM</strong></td>
<td>Both tracks grant full benefits of the program</td>
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<tr>
<td><strong>FUNDING</strong></td>
<td>A minimum amount of funding must be provided through the advisors’ resources: 3 years overall for a PhD student, and 2 years overall for a postdoc.(^2)</td>
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<tr>
<td><strong>APPLICATION</strong></td>
<td>Via (1) centralized recruiting (deadline 1x year in fall, PhDs only) or (2) decentralized continuous recruiting: nomination (possible year-round)</td>
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**Notes**

1. Co-supervision by two ELLIS members (who are not fellows/scholars) is not possible, unless one of the members belongs to the unit *faculty*. This entails that: (i) the person is an ELLIS member and belongs to an ELLIS unit; (ii) the person is entitled to supervise PhD students at the respective institution; (iii) the person is appointed by a Unit Director to participate in the central recruiting/ nomination process.

2. ELLIS itself does not provide funding except for smaller travel grants via the *Mobility Program for PhDs and Postdocs*. 

<table>
<thead>
<tr>
<th>PARTNERS</th>
<th>LOCATION</th>
<th>EXCHANGE</th>
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<tbody>
<tr>
<td>ACADEMIC TRACK</td>
<td>INDUSTRY TRACK</td>
<td></td>
</tr>
<tr>
<td>2 European¹ academic institutions (e.g. universities)</td>
<td>1 European academic institution + 1 European industry player</td>
<td>min. 6 months at the secondary institution (can be split up in multiple visits)</td>
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<tr>
<td>partners must be located in different countries in Europe¹</td>
<td>partners² can be located in the same country/city, but must be based in Europe</td>
<td>time split between academia (min. 50%) and industry (min. 6 months, cumulative)³</td>
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</tbody>
</table>

Notes
1. Exception: The exchange institution can be outside of Europe, but only if the exchange host (secondary advisor) is an ELLIS fellow/scholar. This exception only holds for the academic track.
2. The industry partner, industrial research lab, and industry advisor must all be based in Europe (regardless of HQ location), but can otherwise be in the same country/city as the academic partner.
3. In case there already is an extensive collaboration between an industry and academic partner at one site, e.g. a jointly funded and run industrial-academic lab, slightly different regulations may apply (for more info: phd-industry@ellis.eu).
02 APPLICATION
JOINING ELLIS

There are two main ways to join ELLIS as a junior researcher:

1. **Central application**
   Prospective PhD students apply through the central ELLIS application portal. ELLIS pools candidates across Europe, allowing students to apply to multiple potential advisors and find the best match.

2. **Nomination**
   PhD students or postdocs already working with an ELLIS fellow, scholar or unit faculty may be nominated by their advisors. Currently, postdocs are only recruited non-centrally through nomination.

RESEARCH TOPICS

The ELLIS network covers a wide range of machine learning-driven research areas. We are looking for talented students and postdocs who are passionate about research in these fields. Research areas include but are not limited to:

- Machine Learning Algorithms
- Machine Learning Theory
- Optimization
- Deep Learning
- Interactive and Online Learning
- Reinforcement Learning and Control
- Computer Vision
- Computer Graphics
- Robotics
- Human Computer Interaction
- Natural Language Processing
- Causality
- Interpretability and Fairness
- Robust and Trustworthy ML
- Quantum and Physics-based ML
- Symbolic Machine Learning
- Computational Neuroscience
- Earth and Climate Sciences
- Bioinformatics
- Health
### REQUIREMENTS

#### ACADEMIC TRACK

- **ADVISORS**: 1 ELLIS fellow/scholar/unit faculty + 1 ELLIS fellow/scholar/member
- **CANDIDATE**: There is a publication requirement for existing PhD students/postdocs who are **nominated**: at least 1 first-author publication in one of the top-tier venues in machine learning-driven fields. There is no publication requirement for new students applying via the central application portal.
- **PARTNERS**: 2 European academic institutions that are located in different countries
- **EXCHANGE**: min. 6 months at the secondary institution (can be split up in multiple visits)
- **PUBLICATION**: ELLIS PhD students and postdocs will publish the results of their research in top-tier venues in machine learning-driven fields.

#### INDUSTRY TRACK

- **ADVISORS**: 1 European academic institution + 1 European industry player; may be located in the same country
- **CANDIDATE**: time split between academia (min. 50%) and industry (min. 6 months, cumulative)
- **PARTNERS**: 1 European academic institution + 1 European industry player; may be located in the same country
- **EXCHANGE**: 1 European academic institution + 1 European industry player; may be located in the same country
- **PUBLICATION**: ELLIS PhD students and postdocs will publish the results of their research in top-tier venues in machine learning-driven fields.

All notes and exceptions listed on pp. 7-8 apply.
1. CENTRAL APPLICATION

A central, online application portal is available for new students looking to start a PhD within the ELLIS network.

PhD students in both tracks are supervised by one ELLIS fellow/scholar/unit faculty and one ELLIS fellow/scholar/member and they visit the partner for min. 6 months. Please check all requirements and ellis.eu/faqs before applying.

CENTRAL APPLICATION TO THE PHD PROGRAM

ELLIS offers a coordinated selection process for its pan-European PhD program. Students may apply through the central ELLIS application portal to become a PhD student within the ELLIS network (deadline once a year in fall). In their application, applicants choose from a set of ELLIS research areas and ELLIS fellows/scholars/unit faculty they would like to work with. Candidates will be centrally reviewed for excellence by a pool of experts; the best candidates will be eligible for the ELLIS program and may be invited for interviews by individual advisors. If an offer is made, the parties involved sign a Letter of Intent which specifies the main supervisor, the co-supervisor as well as plans for funding, exchange and graduation. ELLIS does not award degrees; the student must enroll at the degree-granting institution (typically the university the main supervisor is affiliated with).

ANNUAL CALL FOR APPLICATIONS

There is an annual application deadline in fall. Calls are announced on the ELLIS website. The next application deadline is November 15, 2021.

MORE INFO

TIMELINE

**Oct-Nov 15** applications  **Nov-Dec** reviews  **Jan-mid-Feb** interviews  **late Feb-Mar** decisions
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ADDITIONAL INFORMATION FOR APPLICANTS

As part of the application procedure, you will be able to indicate preferences for specific research areas and potential supervisors who are participating in this year's current recruiting round. The list of ELLIS advisors who are recruiting and their research areas will be available in the application portal. For questions about eligibility, please see ellis.eu/faqs.

The application consists of three parts:

(1) **Application form.** In the application form, you provide your personal details, indicate your preferences for research fields and advisors and list relevant degrees and experience.

(2) **Documents.** You will need to upload the following documents (as PDFs):
   - A two-page motivational letter in which you (1) explain why you want to earn a Ph.D. within the ELLIS network and (2) include a research statement describing past research projects and interests as well as the future direction of your research. (Optional: In addition to (1) and (2), you may also mention specific advisors you are interested in working with.)
   - Your current CV that details your educational background, work experience, full citations of any publications you may have, any research presentations you have given, and any awards you have received.
   - Unofficial transcripts of all of your university studies (BSc, MSc), as well as a translation into English.
   - Optionally, additional documents such as a thesis, published paper, or project portfolio, (or parts thereof) as a single PDF (<20 MB).
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ADDITIONAL INFORMATION FOR APPLICANTS

(3) References. You will also be asked to provide the contact details of min. 2 referees (max. 3) who have agreed to submit a reference. Referees will be informed via the application system once you click the button to “request your reference letter”. Recommendation letters must be received before the application deadline, so make sure to get in touch with your referees well in advance.

All application documents (including reference letters) must be submitted before the application deadline. Only complete applications will be considered.
A central, online application portal is available for new students looking to start a PhD within the ELLIS network.

PhD students in both tracks are supervised by one ELLIS fellow/scholar/unit faculty and one ELLIS fellow/scholar/member and they visit the partner for min. 6 months. Please check all requirements and ellis.eu/faqs before applying.

1. CENTRAL APPLICATION

ADDITIONAL INFORMATION FOR APPLICANTS

Advisor and time-sharing requirements

ELLIS PhDs are co-supervised by one ELLIS fellow/scholar/unit faculty and one ELLIS fellow/scholar/member, both based in Europe. During the centralized selection process, the main focus will be on finding a match with the primary advisor. Finding a co-advisor can be done simultaneously, or up to 5 months after acceptance to the program.

Exchange and time-sharing

- **Academic Track**: During their appointment, the PhD student must visit the secondary advisor in a different European country for min. 6 months (partitioning of the time is flexible).

- **Industry Track**: The candidate will spend a minimum of 50% of their time at the academic partner institution and a minimum of 6 months with the industry partner. This can be accumulative (e.g. 2 days per week) or consecutive. The industry partner, industrial research lab, and industry advisor must all be based in Europe (regardless of HQ location), but can otherwise be in the same country/city as the academic partner.

- The PhD degree must come from a European institution.
2. NOMINATION (CONTINUOUS RECRUITING)

The nomination process is available for PhD students and postdocs who are already working with an ELLIS fellow or scholar. Nomination is possible for both the academic and industry track.

Note that postdocs of either track are currently only recruited via nomination.

ELLIS fellows, scholars and unit faculty can nominate their current PhD students and postdocs to the ELLIS PhD & Postdoc Program by sending an email to phd@ellis.eu (academic track) or submitting the relevant form (industry track) via ellis.eu/nomination-phd-postdoc.

NOMINATION PROCESS

1. ELLIS fellows, scholars and unit faculty may nominate PhD students or postdocs who are working with them to become ELLIS PhD students or postdocs by sending an email to phd@ellis.eu (academic track) or submitting the form here (industry track). The PhD student/postdoc must have published at least one first-author paper in a top-tier venue in machine-learning driven fields (NeurIPS, ICML, ICLR, JMLR, CVPR, ICCV, ECCV, IJCV, PAMI, RSS, CoRL, ACL, EMNLP, KDD, AAAI, IJCAI, COLT, UAI, SIGIR, WSDM, Web Conference). In the nomination email, please include the following information:
   - Name of the PhD/postdoc
   - Personal website of the PhD/postdoc
   - Email of the PhD/postdoc
   - Title of the PhD/postdoc project
   - Abstract of the project (5-20 sentences without line break)
   - Primary host: advisor name, role, institution/company, country
   - Secondary host: advisor name, role, institution/company, country
   - Dates: beginning+end of the PhD/postdoc
   - Dates: beginning+end of the exchange period/time-sharing agreement
   - DOI-link to the first-author publication
   - (Optional) Portrait picture of the PhD/postdoc for the website

2. If all requirements have been met, the PhD student/postdoc will receive a Letter of Intent, to be completed together with their advisors. The Letter of Intent verifies that both partner institutions approve of the arrangement and understand the rules of engagement.

3. After the signed Letter of Intent is received, the PhD student/postdoc is admitted to the ELLIS PhD & Postdoc Program.
FREQUENTLY ASKED QUESTIONS

CENTRAL APPLICATION

Do I need to be a European citizen to apply?
No, ELLIS welcomes applications from all qualified candidates regardless of nationality.

I haven’t finished my BSc/MSc degree yet. Can I apply?
Final-year students can apply.

Can I apply if I don’t have a MSc degree?
Rules in Europe vary. Some participating universities require a MSc, others accept BSc students as well (sometimes under specific conditions). You will find this information in the portal if you click on the list of this year’s recruiting advisors.

I’m already working as a PhD student with an ELLIS Fellow/Scholar/Unit Faculty and want to become an ELLIS student. Can I apply to the program through the central recruiting process?
The central recruiting is the primary event for ELLIS faculty to recruit new students. Excellent students who are already doing a PhD with an advisor in the ELLIS network and would like to join the ELLIS program should first consider the light-weight application process via Nomination that is set up for students recruited locally, and is possible year-round (see ellis.eu/phd-postdoc, "How to join ELLIS as a PhD or postdoc", option "2. Nomination" for the requirements).

If requirements for nomination are not fulfilled yet, these students may apply to the ELLIS program centrally if they are still within the first 6 months of their doctoral studies (i.e. students who started on May 15 or later can apply in the next round with application deadline November 15). After that, ELLIS only accepts nominations.

Questions may be directed to phd@ellis.eu. Please read this documentation and the information on the website (ellis.eu/faqs) carefully before sending an email.
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CENTRAL APPLICATION

The ELLIS fellow/scholar/unit faculty I want to work with is not in the list of PhD Advisors in the application portal.
Only fellows/scholars/unit faculty who are recruiting in this year’s round are listed. The list of ELLIS fellows/scholars/unit faculty who are recruiting in this year’s round can be found in the application portal.

Will I get an ELLIS degree?
ELLIS is a non-profit organisation that cannot award official degrees. The ELLIS PhD & Postdoc Program is a meta program on top of existing graduate programs. The student will enrol as a student or be employed at a degree-granting institution (typically the university your main supervisor is affiliated to) and must comply with all the regulations and fulfil all the requirements of the host institution.

If I get an offer from an advisor within ELLIS, how exactly will my PhD be funded?
ELLIS does not employ or fund PhD students (except for providing smaller travel grants). If you get an offer, you will be funded through your advisors’ resources. After accepting the offer, the student and the two advisors will sign a Letter of Intent which specifies the funding plan (among other things). The ELLIS Team cannot give you any details about the amount of funding beforehand because it may differ from country to country and from advisor to advisor. You can ask for more details during the interview. Only ELLIS fellows/scholars/unit faculty who have open positions are listed in the application portal.
CENTRAL APPLICATION

Do I need to apply to the university that the main advisor is affiliated to?
It depends on what the rules of the host institution are. In brief: ELLIS offers an EU-wide central application portal and coordinates the matching process, but the official hiring process is local, governed by the institution of your main advisor.

If you want to apply for a PhD as part of the ELLIS PhD Program, you would typically first apply through the ELLIS portal (but see below for important exceptions).

Each year, ELLIS Fellows, Scholars and Unit Faculty may sign up to recruit new PhD students through the centralized recruiting of the ELLIS PhD program. Students may select preferences for various advisors from the list of recruiting ELLIS advisors. The best students will be eligible for the ELLIS program and may be invited for interviews by individual advisors. If the student gets an offer, the student and two supervisors will sign a letter of intent which specifies the plans for funding, graduation and the exchange. However, ELLIS does not provide funding (except for smaller travel grants) nor does it award degrees. The ELLIS PhD Program is a meta program on top of existing graduate programs. I.e., you will be funded through your advisors' resources and the degree will come from a university. This means that all the official paperwork goes through the institution of your main advisor and you have to comply with all their rules. Consequently, new students must be accepted to the degree granting university in addition to being accepted as an ELLIS student (i.e., the acceptance to the ELLIS PhD program is a conditional accept).

>> continued on the next page
CENTRAL APPLICATION

Do I need to apply to the university that the main advisor is affiliated to?

After you accept the offer to become an ELLIS PhD student, you should ask your advisor which steps you have to take to become a student/an employee at the degree-granting institution (e.g. submitting documents, applying to the local doctoral school, etc.). Rules may vary depending on the institution.

*IMPORTANT* Some universities (e.g. University of Oxford) do not accept graduate students throughout the year, but have strict deadlines for applying to their graduate programs, which may be earlier than the ELLIS deadline. In this case, you should not wait until the ELLIS selection procedure has ended, but apply in parallel if you don't want to wait for the next deadline to enroll as a PhD should you get an ELLIS offer. If unsure, visit the website of the university or contact your preferred advisor. It's safest to apply to both programs in parallel to avoid any delays in the starting date of your contract. Advisors will also be able to indicate in the portal if a parallel application is required.
Questions may be directed to phd-industry@ellis.eu. Please read this documentation and the information on the website (ellis.eu/faqs) carefully before sending an email.

FREQUENTLY ASKED QUESTIONS

INDUSTRY TRACK

I am an ELLIS fellow and would like to nominate a PhD or postdoc for the industry track, but do not currently have an active collaboration with industry. Will ELLIS arrange this?
No. Currently, the ELLIS industry track is only able to consider active collaborations and cannot begin or arrange such collaborations.

I am part of an existing collaboration between industry and academia. Can our current PhD students and postdocs apply to the ELLIS industrial track?
Yes! This is the ideal way to begin an ELLIS industry track PhD or postdoc. In order to accommodate the practices and regulations of various participating organizations across different European countries, there are only a few requirements that must be met before nomination (see requirements slide 02). Beyond this criteria, the exact details of each arrangement are left open and flexible for the partner organizations to determine along with the candidate. See the Application section for details on nominating candidates.

I am part of an existing collaboration between industry and academia, but we do not currently have PhD students or postdocs, although we would like to. Does ELLIS support in setting up these arrangements?
Because of the diversity in ways of working, requirements and regulations among academic institutions, companies, and between European countries, ELLIS cannot individually assist in setting up partnerships and collaborations that support PhD students or postdocs. However, it can recommend best practices and ways of working that help to serve the various needs of the collaborators. If you have questions about general setup or best practices, you can send an email to phd-industry@ellis.eu.
04
CONTACT
PHD & POSTDOC COMMITTEE & COORDINATION

PhD & Postdoc Committee
Nicolò Cesa-Bianchi
Università degli Studi di Milano
Andreas Geiger
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Christoph H. Lampert
IST Austria
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Max Planck Institute for Intelligent Systems
Josef Sivic
Czech Technical University, École Normale Supérieure & INRIA
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