

Early Stage Researcher (ESR) Doctoral Studentships in the Marie Skłodowska-Curie Innovation Training Network ‘Plenoptic Imaging‘

The Technische Universität Berlin (TUB) looks back over a long and distinguished tradition of teaching and research, and is one of the largest technical universities in Germany. The university's seven faculties and its 40 institutes offer approx. 130 courses of study from the fields of engineering and natural sciences, economics and business, planning sciences, humanities and the social sciences. Enrolment at TUB is about 34,000 students. Nearly 26 per cent are foreign citizens. The university is known for its high ranked engineering programs, especially in electrical engineering and computer science, mechanical engineering and engineering management. www.tu.berlin/en/

[Plenoptic Imaging](#) (PLENOPTIMA) is a four-year (2021–2024) H2020 Marie Skłodowska-Curie Innovative Training Network that develops a cross-disciplinary approach to plenoptic imaging, which includes new optical materials and sensing principles, signal processing methods, new computing architectures, and vision science modelling. With this aim, PLENOPTIMA integrates [five of the strongest research groups](#) in nanophotonics, imaging and machine learning in Europe with [twelve innovative companies, research institutes, and a pre-competitive business ecosystem](#) developing and marketing plenoptic imaging devices and services.

JOB DESCRIPTION

The Technische Universität Berlin offers a position for early-stage researchers (ESRs) for the duration of 3 years. An ESR job position requires conducting research on an individual project at a doctoral student level and studying toward completing a doctoral degree. We are looking for candidates who have a strong background and motivation to work on highly innovative projects and be trained in competitive yet collaborative research and study environment. The ESR will be working on a specified project and will be registered in a Double degree doctoral program with Mid Sweden University as described below.

ESR9: Gated experts compression of light field video

Objectives: Develop algorithmic foundations, utilizing long-range spatial-temporal redundancies, of a novel thinking-framework for Light Field video codec design that will enable high compression gains. Develop suitable models and an End-to-End rate-distortion optimization framework that incorporates human visual quality metrics specifically designed for Light Field data.

Expected Results: Specialized Mixture-of-Experts Gating Networks for Light Field video compression. New optimization algorithms for determining the optimal Mixture-of-Experts Gating network parameters. Achieving compression results that exceed those of MPEG-type algorithms.

Planned secondment: Secondments to other network partners for up to 11 months have been planned. The secondments include: extension of quality metrics to incorporate conflicting requirements and restrictions in human and computer vision system focused applications. Hands-on experience with high-performance video codecs for the next generation of SpinDigital's ultra-high quality video applications.

Double PhD degree with Mittuniversitetet (Mid Sweden University).

The research will be supported by an extensive training program consisting of [training schools](#), [workshops](#), and [webinars](#).

Mobility between network partners is supported by research visits and secondments. In this way, the employed researchers will be integrated in the network with the aim to help them to interact with their fellows and within different research, development and innovation environments.

REQUIREMENTS

- We are looking for talented, creative and highly motivated researchers.
- Applicants must hold a Master's degree or equivalent in the fields of electrical engineering, communications engineering, information technology, computer science, or a closely related field, completed with good grades.
- The positions include transnational mobility (i.e. moving from one country to another)
- Applicants shall, at the time of recruitment by the host organization, be in the first four years (full-time equivalent research experience) of their research careers and not yet have been awarded a doctoral degree. Full-time equivalent research experience is measured from the date when a researcher obtained the degree that would formally entitle him/her to embark on a doctorate.
- H2020 MSCA Mobility Rule: at the time of recruitment by the host organization, researchers must not have resided or carried out their main activity (work, studies, etc.) in the country of their host organization for more than 12 months in the 3 years immediately prior to the recruitment date. Compulsory national service and/or short stays such as holidays and time spent as part of a procedure for obtaining refugee status under the Geneva Convention are not taken into account.

WE OFFER

We offer highly innovative training that will help you to build a solid fundamental of the area and will put you in an extremely good position in your future career endeavors in a rapidly growing sector.

The salary will be set in accordance with MSCA ESR rates.

We offer a wide range of staff benefits, such as occupational health care, flexible working hours, excellent sports facilities on campus and several restaurants and cafés on campus with staff discounts. Technische Universität Berlin is certified as a family-friendly university. Combining career, studies, and family life is an essential component of the University's identity. It supports its employees' life-work balance with a diverse range of offerings. www.tu.berlin/en/arbeiten/karriere/

HOW TO APPLY

Please submit your application via email to sekr@nue.tu-berlin.de. **The closing date for applications is 14. March 2021 (23:59 CET / UTC+1). Please write your application and all the accompanying documentation in English and attach them in PDF format. Indicate if your application can be shared with the other parties inside the PLENOPTIMA network.**

Please attach only the following documents to your application:

- A letter of motivation (max. 1 page)
- Curriculum vitae including a list of publications and the contact details of two referees
- Copy of your MSc+BSc degree certificates including transcripts of all university records and their English translations and Diploma Supplement

For more information, please contact:

Prof. Dr. Thomas Sikora – sikora@nue.tu-berlin.de