

Ph.D./Early Stage Researcher (ESR9) position in Computer Vision

The French University of Burgundy (also called Bourgogne) in Dijon (<http://en.u-bourgogne.fr>), part of the University of Burgundy Franche-Comté Community (<http://www.ubfc.fr/ubfc/presentation/>) invites applications for 3-year full time PhD/Early Stage Researcher (ESR9) position in Computer Science in the context of the EU- Funded Marie Skłodowska-Curie Initial Training Network (ITN) project entitled Cultural Heritage Analysis for New GEnerations (CHANGE) (www.change-itn.eu).

The position will be located at the Laboratory ImViA (Image and Artificial Vision ex-LE2I (www.le2i.cnrs.fr)) based at the High School ESIREM in Dijon.

The recruited researchers will work in a high-level international research environment within the Laboratory ImViA, at the premises of University of Burgundy, and in close collaboration with other researchers from the CHANGE network. During the 36-month contract, the PhD candidate will spend maximum of 10 months in secondments/internships to the other project partners. The candidate should enroll in a PhD program, and also participate in a rich program of organized research training activities, enabling her/him for a future career as scientist, engineers, entrepreneurs and innovators who can assume scientific and technological leadership in the field of visual computing, imaging techniques and conservation science.

The recruited candidates will work on distinct but related fields of research within the CHANGE project. The position and a brief description of the research in this position is given below. The position description is also available on the project website <http://www.change-itn.eu/>.

Position description: Could the appearance changes be linked to the defects in geometry? Is this dependent on the scale? How a change in local geometry is perceived photometrically by a human subject. These are the underlying questions of this research. The candidate is expected to work towards the development of innovative methods devoted to link the visual appearance change assessment with geometric attributes based on imaging and Machine Learning approaches. During the research, the candidate will 1) Investigate the relation between changes in appearance and its underlying geometric mechanisms 2) Surface roughness reconstruction by combining stereo-photometry and ‘Shape From Focus’ 3) Local and global singularities detection on 3D surfaces with impact on photometric attributes and global appearance 4) Model and reverse-model of the link between surface 3D and appearance through photometric attributes. In parallel the candidate will explore and implement Machine Learning/Deep learning approaches for surfaces’ appearance characterization without a priori models.

Main supervisor: Alamin Mansouri (University of Bourgogne)

Co-supervisors: Robert Sitnik (WUT, Poland), Clotilde Boust (C2RMF, Louvre Museum, France)

Qualifications required for the announced position:

The candidate must:

- Hold a Master’s degree (or equivalent) within the field of computer science, physics, colour imaging, physics, electrical engineering or a related discipline obtained with very good final grade (with an average grade of B or better).

Applicants with no letter grades from previous studies must have an equally good academic foundation. Applicants who are unable to meet these criteria may be considered only if they can document that they are particularly suitable candidates for education leading to a PhD degree.

The following is desired:

- ➔ Knowledge and experience with computer vision, physics.
- ➔ Knowledge and experience with control and automation,

➔ Programming skills in Matlab, Python, or similar programming environments

Formal regulations

Eligibility criteria:

Eligibility for admission will be determined by considering the combination of the candidate's academic qualifications and relevant professional experience according to the table below.

Candidates who have completed their Master degree in an institution where English is not the language of instruction must present one of the following Secure English Language Test (SELT) results as follows:

- ✓TOEFL Internet-Based (iBT) – minimum 95 with a writing score of at least 24
- ✓Academic IELTS – minimum 6.5 with a minimum of 6.0 in each element
- ✓Advanced Cambridge Certificate at grade C or better.
- ✓The test results must not be older than 24 months on the date of the application deadline.

Selection criteria:

✓Quality of the candidate assessed through the candidate's academic merit and relevant professional experience.

✓The candidate should also possess a sound working knowledge of quantitative & qualitative research methods, experimental design, programming and knowledge of statistical methods.

Personal attributes:

✓High motivation for research work and ability to work independently

✓Ability to work both individually and in a (virtual) team environment and a high level of personal responsibility, initiative and leadership skills

✓Excellent oral and written communication skills and an ability to communicate effectively across different stakeholder groups.

✓Flexibility and ability to take direction and accommodate feedback from diverse stakeholders.

✓Ability to work both individually and in a (virtual) team environment and a high level of personal responsibility, initiative and leadership skills

✓Ability to meet deadlines and produce work of a consistently high standard.

✓High motivation for research work and ability to work independently

✓Good organization and communication skills

✓Eager to disseminate research results through publications and presentations at international conferences.

In the evaluation of which candidate is best qualified, emphasis will be placed on education, experience and personal suitability, in terms of the qualification requirements specified in the advertisement.

Please note there are strict eligibility requirements that apply to all Marie Skłodowska-Curie Researchers:

✓The candidates must not have resided or carried out his/her main activity (work, studies, etc.) in France for more than 12 months in the 3 years immediately prior to his/her recruitment under the project (short stays such as holidays are not counted).

✓At the time of recruitment, the candidates must not have been awarded a doctorate degree and must be in the first 4 years of her/his research career.

✓The candidates must work exclusively for the project during the employment contract.

✓Researchers can be of any nationality. They are required to undertake transnational mobility (i.e. Move from one country to another) when taking up their appointment.

The university is committed to a policy of equal opportunity in employment practices, and we would particularly like to encourage female candidates to apply.

For further information on Marie Skłodowska-Curie schemes and eligibility please visit <http://ec.europa.eu/research/mariecurieactions> and [Guide for Applicants](#)

Applicants must be qualified for admission as PhD students at University of Burgundy Franche - Comté. See <http://en.collegedoctoral.univ-bfc.fr> for information about PhD studies at UBFC.

Salary conditions

PhD candidates are normally remunerated at gross from 32100€ per annum. Reimbursement of home-work charges is possible as well as a family supplement (SFT).

In addition, there will be a mobility allowance at gross 5076€ and family allowance 4224€ per annum. Eligibility for receiving family allowance depends on the family status when the contract starts.

The period of employment is 3 years. Appointment to a PhD position requires admission to the PhD programme in Computer Science. As a PhD candidate, you undertake to participate in an organized PhD programme during the employment period. A condition of appointment is that you follow the entire programme (about 100hours over three years).

Appointment takes place on the terms that apply to State employees at any time, and after the appointment you must assume that there may be changes in the area of work.

Living and working in Dijon

Information can be found via the following links:

about the region Bourgogne Franche-Comté: <https://en.bourgognefranchecomte.com/>

Living in Dijon: <http://www.destinationdijon.com/en/> <https://www.dijon.fr/>

About Campus of Dijon: <http://en.u-bourgogne.fr/life-on-ub.html> <http://www.u-bourgogne.fr/vie-des-campus/campus-de-dijon.html>

We offer

- ➡Prestigious EU fellowship.
- ➡Be part of a team of leading scientists in different fields of academia doing interdisciplinary research (Visual computing, Imaging techniques, Conservation science)
- ➡Opportunity to develop multidisciplinary research skills.
- ➡Excellent training programme covering research within the field of the topic covered in the PhD position.
- ➡Establish a professional network Internships and visits to different institutes within industry and academia.

To apply

Send an email with explicit subject (e.g Application for ITN-CHANGE-ESR9) containing all required documents (cf. application components above) **compiled in one PDF file** to the email

addresses (alamin.mansouri@ubfc.fr gaetan.le-goic@ubfc.fr). Candidates must submit the following documents in electronic form:

Application components:

✓Curriculum vitae. Include if there any relevant publications and the names and contact information of 2 references.

✓Copies of academic certificates and transcripts.

✓Motivation letter

✓A brief research proposal addressing the topic of the research project (2-3 pages)

✓English proficiency results if applicable.

✓Publications and other academic works that the applicant would like to be considered in the evaluation must accompany the application. Joint works will be considered. If it is difficult to identify the individual applicant's contribution to joint works, the applicant must include a brief description of his or her contribution

For additional information about the research project, contact:

Main supervisor Alamin Mansouri, phone (+33) 667697849, email: alamin.mansouri@ubfc.fr or project coordinator Jon Yngve Hardeberg, phone (+47) 6113521, email: jon.hardeberg@ntnu.no

Application deadline: 15 February 2019

Starting date: September 2019