Offre n°2024-07874

PhD Position F/M PhD Position Computer Vision / Deep Learning: Video Generation

Le descriptif de l'offre ci-dessous est en Anglais

Type de contrat : CDD

Niveau de diplôme exigé : Bac + 5 ou équivalent

Fonction : Doctorant

A propos du centre ou de la direction fonctionnelle

The Inria centre at Université Côte d'Azur includes 42 research teams and 9 support services. The center's staff (about 500 people) is made up of scientists of different nationalities, engineers, technicians and administrative staff. The teams are mainly located on the university campuses of Sophia Antipolis and Nice as well as Montpellier, in close collaboration with research and higher education laboratories and establishments (Université Côte d'Azur, CNRS, INRAE, INSERM …), but also with the regional economic players.

With a presence in the fields of computational neuroscience and biology, data science and modeling, software engineering and certification, as well as collaborative robotics, the Inria Centre at Université Côte d'Azur is a major player in terms of scientific excellence through its results and collaborations at both European and international levels.

Contexte et atouts du poste

Inria, the French National Institute for computer science and applied mathematics, promotes "scientific excellence for technology transfer and society". Graduates from the world's top universities, Inria's 2,700 employees rise to the challenges of digital sciences. With its open, agile model, Inria is able to explore original approaches with its partners in industry and academia and provide an efficient response to the multidisciplinary and application challenges of the digital transformation. Inria is the source of many innovations that add value and create jobs.

Team

The STARS research team combines advanced theory with cutting edge practice focusing on cognitive vision systems.

Team web site : *https://team.inria.fr/stars/*

Mission confiée

The Inria STARS team is seeking for a Ph.D. researcher with strong background in computer vision, deep learning and machine learning.

The candidate is expected to conduct research related to generative models, including the development of computer vision algorithms for image and video generation.

Principales activités

Context:

Generative models have witnessed increased interest from academia and industry, due to exceptional capacity in generating highly realistic *images*. *Videos* signify more complex data, due to the additional temporal dimension. While some research works showed early results in video generation, there are many open questions in the field.

1. Model architecture

The thesis firstly will investigate, how to design model architectures for video generation.

2. 3D-aware generation

Learning 3D-aware models from 2D data has become a popular research topic in image generation. In this thesis, we will go one step further in this direction to explore novel view synthesis in video

generation.

3. Generalizability

Finally, we will aim to design a universal model which is able to generate videos across categories. Most of current models focus on generating single category (e.g., faces, sky…). Currently, there is no models, which are able to generate complex multi-category videos (e.g. Kinetics-600). We plan to increase the complexity of video generative models and design a large-scale video generative model. The objective is to study whether big generative models are able to capture the distribution of complex video datasets and create semantic meaningful videos.

Compétences

Candidates must hold a Master degree or equivalent in Computer Science or a closely related discipline by the start date.

The candidate must be grounded in the basics of computer vision, have solid mathematical and programming skills.

Preferably in Python, OpenCV, deep learning framework Pytorch or Tensorflow.

The candidate must be committed to scientific research and strong publications.

Avantages

- Subsidized meals
- Partial reimbursement of public transport costs
- Leave: 7 weeks of annual leave + 10 extra days off due to RTT (statutory reduction in working hours) + possibility of exceptional leave (sick children, moving home, etc.)
- Possibility of teleworking and flexible organization of working hours
- Professional equipment available (videoconferencing, loan of computer equipment, etc.)
- Social, cultural and sports events and activities
- Access to vocational training
- Contribution to mutual insurance (subject to conditions)

Rémunération

Gross Salary per month: 2100€ brut per month (year 1 & 2) and 2190€ brut per month (year 3)

Informations générales

- **Thème/Domaine** : Vision, perception et interprétation multimedia
- **Ville** : Sophia Antipolis
- **Centre Inria** : Centre Inria d'Université Côte d'Azur
- **Date de prise de fonction souhaitée** : 2024-08-01
- **Durée de contrat** : 3 ans
- **Date limite pour postuler** : 2024-07-23

Contacts

- **Équipe Inria** : STARS
- **Directeur de thèse** :
  Dantcheva Antitza / antitza.dantcheva@inria.fr

A propos d'Inria

Inria est l'institut national de recherche dédié aux sciences et technologies du numérique. Il emploie 2600 personnes. Ses 215 équipes-projets agiles, en général communes avec des partenaires académiques, impliquent plus de 3900 scientifiques pour relever les défis du numérique, souvent à l'interface d'autres disciplines. L'institut fait appel à de nombreux talents dans plus d'une quarantaine de métiers différents. 900 personnels d'appui à la recherche et à l'innovation contribuent à faire émerger et grandir des projets scientifiques ou entrepreneuriaux qui impactent le monde. Inria travaille avec de nombreuses entreprises et a accompagné la création de plus de 200 start-up. L'institut s'efforce ainsi de répondre aux enjeux de la transformation numérique de la science, de la société et de l'économie.

> **Attention** : Les candidatures doivent être déposées en ligne sur le site Inria. Le traitement des candidatures adressées par d'autres canaux n'est pas garanti.

Consignes pour postuler

Sécurité défense :
Ce poste est susceptible d'être affecté dans une zone à régime restrictif (ZRR), telle que définie dans le décret n°2011-1425 relatif à la protection du potentiel scientifique et technique de la nation (PPST). L'autorisation d'accès à une zone est délivrée par le chef d'établissement, après avis ministériel favorable,

tel que défini dans l'arrêté du 03 juillet 2012, relatif à la PPST. Un avis ministériel défavorable pour un poste affecté dans une ZRR aurait pour conséquence l'annulation du recrutement.

Politique de recrutement :
Dans le cadre de sa politique diversité, tous les postes Inria sont accessibles aux personnes en situation de handicap.