



Offer #2025-08757

Research Internship: Foundations of generative modeling

Level of qualifications required : Master's or equivalent

Fonction : Internship Research

Assignment

With the support of researchers from Criteo AI Lab and Inria, the recruited person will:

- Explore theoretical connections between different families of generative models
- Implement hybrid prototypes combining the strengths of GANs and diffusion models
- Develop robust evaluation protocols to quantify improvements
- Contribute to the development of novel theoretical frameworks`

Main activities

For better knowledge of the proposed research topic: Relevant scientific references are available in our recent publication "Unifying GANs and score-based diffusion as generative particle models" (NeurIPS 2023) and "Improving consistency models with generator-augmented flows" (arXiv 2024).

Proposed Research Directions

- Scaling hybrid GAN-diffusion models from prototype to state-of-the-art quality

- Extending theoretical links between diffusion and GANs by removing simplifying hypotheses
- Investigating the gap between one-step generator training and diffusion distillation
- Extending diffusion distillation to more general multi-step models like flow matching

Skills

- Strong background in machine/deep learning and mathematics
- Knowledge of computer vision and image processing
- Familiarity with generative models (GANs, diffusion, consistency models) and deep learning architectures (CNNs, transformers)
- Proficiency in Python and experience with deep learning frameworks (PyTorch and/or JAX)
- Appetite for theoretical and applied scientific research
- Ability to conduct exploratory research with significant autonomy

Benefits package

- 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

General Information

- **Town/city** : Paris
- **Inria Center** : [Centre Inria de Paris](#)
- **Starting date** : 2025-04-30
- **Duration of contract** : 5 months
- **Deadline to apply** : 2025-04-30

Contacts

- **Inria Team** : AT-PRO AE

- **Recruiter :**

De Bezenac Emmanuel / emmanuel.de-bezenac@inria.fr

About Inria

Inria is the French national research institute dedicated to digital science and technology. It employs 2,600 people. Its 200 agile project teams, generally run jointly with academic partners, include more than 3,500 scientists and engineers working to meet the challenges of digital technology, often at the interface with other disciplines. The Institute also employs numerous talents in over forty different professions. 900 research support staff contribute to the preparation and development of scientific and entrepreneurial projects that have a worldwide impact.

Warning : you must enter your e-mail address in order to save your application to Inria. Applications must be submitted online on the Inria website. Processing of applications sent from other channels is not guaranteed.

Instruction to apply

Defence Security :

This position is likely to be situated in a restricted area (ZRR), as defined in Decree No. 2011-1425 relating to the protection of national scientific and technical potential (PPST). Authorisation to enter an area is granted by the director of the unit, following a favourable Ministerial decision, as defined in the decree of 3 July 2012 relating to the PPST. An unfavourable Ministerial decision in respect of a position situated in a ZRR would result in the cancellation of the appointment.

Recruitment Policy :

As part of its diversity policy, all Inria positions are accessible to people with disabilities.