



**Offer #2024-08160**

## Authoring tools for creative data communication

**Contract type** : Fixed-term contract

**Level of qualifications required** : Graduate degree or equivalent

**Fonction** : Temporary scientific engineer

### About the research centre or Inria department

The Inria Saclay-Île-de-France Research Centre was established in 2008. It has developed as part of the Saclay site in partnership with **Paris-Saclay University** and with the **Institut Polytechnique de Paris**.

The centre has [40 project teams](#), 32 of which operate jointly with Paris-Saclay University and the Institut Polytechnique de Paris; Its activities occupy over 600 people, scientists and research and innovation support staff, including 44 different nationalities.

### Context

This work is funded by the ANR project ANR-21-CE33-0002 GLACIS. It may eventually prepare a PhD thesis on generative creation tools.

### Assignment

Visualizations are widely used to summarize complex data, illustrate problems and solutions, tell stories over data, or shape public attitudes. This project investigates interactive tools and techniques that can help graphic designers, illustrators, data journalists, and infographic artists produce creative and effective visualizations for communication purposes, e.g., to inform the public about global-warming predictions or to incite people to reflect on the impact of human activities.

A key challenge for many creators is how to rapidly generate visuals to iterate on ideas. Dominant visualization systems target data-exploration and data-analysis tasks and fail to meet communication purposes [Kosara, 2016]. Previous studies [Bigelow, 2014] also suggest that current visualization tools impose a data-to-graphics workflow that hinders visual thinking. As a result, the process of creating an original infographic can be extremely manual, involving multiple tools that are largely disconnected from the underlying data.

In this research, we aim to address the more ambitious goal of computer-aided design that treats infographic creation as a visual-thinking process. This process is driven by the graphics, starting from sketches, moving to generative parametric instructions, which can then re-feed the designer's sketches and graphics. This work will be based on our visualisation authoring systems designed in our team, such as StructGraphics [Tsandilas, 2021] and DataGarden [Offenwanger, 2024]. Drawing inspiration from the creative power of generative models [Schetinger, 2023] and in close interaction with visual artists, our goal is to develop a set of tools that help creators generate organic visual representations and bind their visual parameters to the dimensions of their data.

### Main activities

The steps that we envision are:

1. Running a study with creators to understand their workflows and identify storytelling techniques they use to communicate information to their audience.
2. Develop an interactive tool that helps them quickly express and evaluate their storytelling ideas without necessarily having to code.

### References

A. Bigelow, S. Drucker, D. Fisher, and M. Meyer. Reflections on how designers design with data. In Proc. AVI, 2014.

R. Kosara. Presentation-oriented visualization techniques. IEEE Comp. Graph. and Applications, 36(1):80–85, Jan 2016.

Schetinger, V., Di Bartolomeo, S., El-Assady, M., McNutt, A. M., Miller, M., & Adams. Doom or deliciousness: challenges and opportunities for visualization in the age of generative models. Computer Graphics Forum—EuroVis/CGF. 2023.

A. Offenwanger, T. Tsandilas, and F. Chevalier. DataGarden: Formalizing Personal Sketches into Structured Visualization Templates. To appear at VIS 2024 (IEEE Trans. on Visualization and Computer Graphics). <https://datagarden-git.github.io/datagarden>

T. Tsandilas. StructGraphics: Flexible Visualization Design through Data-Agnostic and Reusable Graphical Structures. IEEE Trans. on Visualization and Computer Graphics, pp. 315-325, 2021. <https://www.lri.fr/~fanis/StructGraphics>

## Skills

The candidate should have a M2 degree, a background in Human-Computer Interaction, and experience with creativity-support tools.

## 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
- Access to vocational training
- Social security coverage

## Remuneration

Regarding professional experience

## General Information

- **Theme/Domain** : Interaction and visualization Information system (BAP E)
- **Town/city** : Palaiseau
- **Inria Center** : [Centre Inria de Saclay](#)
- **Starting date** : 2024-11-04
- **Duration of contract** : 10 months
- **Deadline to apply** : 2024-11-03

## Contacts

- **Inria Team** : [EX-SITU](#)
- **Recruiter** :  
Tsandilas Theofanis / [Theophanis.Tsandilas@inria.fr](mailto:Theophanis.Tsandilas@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

To apply, please provide :

- CV
- Cover letter
- Letter(s) of recommendation, where applicable

### 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.