**2021-03382 - Visualization / Web Engineer**

**Contract type :** Fixed-term contract  
**Level of qualifications required :** Graduate degree or equivalent  
**Function :** Temporary scientific engineer

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**About the research centre or Inria department**

Located at the heart of the main national research and higher education cluster, member of the Université Paris Saclay, a major actor in the French Investments for the Future Programme (Idex, LabEx, IRT, EquipeX) and partner of the main establishments present on the plateau, the centre is particularly active in three major areas: data and knowledge, safety, security and reliability; modelling, simulation and optimisation (with priority given to energy).

The 450 researchers and engineers from Inria and its partners who work in the research centre’s 28 teams, the 60 research support staff members, the high-level equipment at their disposal (image walls, high-performance computing clusters, sensor networks), and the privileged relationships with prestigious industrial partners, all make Inria Saclay Île-de-France a key research centre in the local landscape and one that is oriented towards Europe and the world.

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**Context**

Project-teams ILDA (Saclay) and LinkMedia (Rennes) are collaborating on the design and development of a visualization tool for data extracted from RDF knowledge graphs with a strong emphasis on the temporal arrangement of facts described in these graphs. This tool is part of a broader Inria project named “CODA, Knowledge-mediated Content and Data Analytics - The case of data journalism”. The project aims at advancing the state of the art in multimedia analytics. One goal of the project is to help journalists sufficiently infer useful information and knowledge by collaboratively inspecting heterogeneous information sources (structured or not). The information sources can be diverse and may include newspapers’ archives, governmental/official knowledge bases, ontologies, etc. Overall, the project stands at the crossroad of multiple research fields such as content analysis, data management knowledge representation, reasoning and visualization.

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**Assignment**

The engineer will continue the development of a Web-based visualization prototype that allows journalists to explore hypergraphs that model how news stories evolve over time. Such a news story may for example involve multiple people, multiple places, multiple companies, and their relations. The visualization allows journalists to view the relationships between these entities, and the origin of these relationships from multiple vantage points. For instance, it can help journalists observe so-far-unnoticed informational threads that merge into an existing news story (such as unobserved connections between political figures, e.g., who studied at the same university together), unnoticed interesting developments that stem from news articles (increasing popularity of particular topics or movements), and use these observations to create more news stories themselves.

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**Main activities**

- Add support for geo-visualization in the current prototype. This includes both data processing to assign geographical meaning to entities from a dataset and visual representation of them in the interface.
- Adapt front-end to match the API defined in collaboration with the engineer in charge of the data storage & query backend. Participate to the definition and testing of the API between the visualization engine and data source type. This will entail adapting the visualization engine to support diverse data sources, large dataset results, and a general aggregation mechanism (limited to temporal aggregation in the current prototype).
- Revisit the front-end based on testing and user-studies involving workshops or interviews with data journalists to understand use-case needs. This goal is separated into two steps: (i) implement the code to conduct studies and (ii) after the results of the studies are processed, adapt the visualization according to them.
- Create demos, test and adapt the visualization based on end-user feedback.

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**Skills**

- The engineer must have solid experience in Web development. The current visualization prototype is implemented in Django, a Python-based web framework, and D3.js, a javascript visualization library. The engineer must have expertise with both tools and both programming languages.
- The engineer will have to work in collaboration with the engineer in charge of the backend. Basic knowledge of databases (both querying and data transformation) is a requirement, so as to be able to process the results from the back-end before input to the visualization interface.

**Languages :** English

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**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 (after 6 months of employment) 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

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**General Information**

- **Theme/Domain :** Interaction and visualization  
- **Town/City :** GIF-sur-Yvette  
- **Inria Center :** CRI Saclay - Île-de-France  
- **Starting date :** 2021-05-01  
- **Duration of contract :** 12 months  
- **Deadline to apply :** 2021-04-09

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**Contacts**

- **Inria Team :** ILDA  
- **Recruiter :** Pietriga Emmanuel  
  Emmanuel.Pietriga@inria.fr  

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**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.

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**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.

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**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.
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