Offer #2025-09284

Product Engineer, 3D Reconstruction

Level of qualifications required : Graduate degree or equivalent

Other valued qualifications : Master's degree or Phd

Fonction : Temporary scientific engineer

Level of experience : From 3 to 5 years

Context

This position is within the Inria Startup Studio program at Inria Rennes, focused on developing accessible real-time 3D reconstruction software. The selected candidate will work directly with Andréas Meuleman (project leader, formerly researcher at GRAPHDECO) and George Drettakis (scientific advisor, group leader of the GRAPHDECO research group) to transform research into a commercial product that enables photorealistic 3D model creation.

The team that invented 3D Gaussian Splatting (3DGS) has continued improving the method with publications at SIGGRAPH 2024, I3D 2024, EGSR 2024 etc. This project builds on the latest development of the 3DGS team, published at ACM Transactions on Graphics, and presented at SIGGRAPH 2025. The technology enables real-time photorealistic 3D reconstruction using a camera, providing live feedback during capture - a major breakthrough that is orders of magnitude faster than existing methods.

The Inria Startup Studio provides a 12-month program supporting researchers in transforming their research into commercial ventures, offering training in entrepreneurship, business development, and access to Inria's extensive network. The selected candidate may have the opportunity to become a founding member of the startup upon its creation.

References:

On-the-fly Reconstruction for Large-Scale Novel View Synthesis from Unposed Images, Andreas Meuleman, Ishaan Shah, Alexandre Lanvin, Bernhard Kerbl, George Drettakis, ACM TOG, proc. SIGGRAPH 2025
https://repo-sam.inria.fr/nerphys/on-the-fly-nvs/

Assignment

The primary objective is to transform the "On-the-fly NVS" research prototype into production-ready software that will form the foundation of a new startup. The engineer will be involved in enhancing the algorithm's robustness and/or developing user-facing applications and interfaces that make 3D reconstruction accessible to non-technical users.

Specifically, this could involve improving the system's handling of challenging capture conditions (complex camera paths, occlusions, varying lighting) and optimizing computational performance through GPU programming. Alternatively, the focus could be on developing a mobile application with intuitive user experience design that provides real-time reconstruction feedback during capture, or building web-based integration tools with GPU-accelerated rendering and WebAssembly for high-performance 3D viewing and seamless deployment.

As an early team member, the engineer will have the opportunity to interact with the members of the original 3DGS team and to contribute to technical architecture decisions and product direction, with potential customers in construction, real estate, e-commerce, visual effects, and/or gaming industries.

Main activities

The engineer will adapt and integrate research algorithms for production environments. Responsibilities could include resolving robustness issues in real-world capture scenarios or developing user-facing applications (mobile or web-based).

Skills

Required qualifications :

- Engineering degree, Master's degree or PhD in Computer Science or related fields, or equivalent experience
- Strong programming proficiency
- Experience with DevOps tools such as Git and Docker
- Strong English communication skills
- Interest in entrepreneurial ventures and startup environments

The ideal candidate will have one or more of the following (in no particular order)**:**

- Mobile app development experience (iOS/Android)
- Knowledge of UX design
- Familiarity with web technologies for 3D (JavaScript, three.js, babylon.js)
- Programming experience in Python, C++, or Rust
- Experience with shader or parallel programming (GLSL, CUDA, …)
- Experience with optimization and autograd libraries such as PyTorch

- Understanding of computer vision and/or computer graphics algorithms is a plus

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

General Information

- **Town/city :** Rennes
- **Inria Center :** Centre Inria de l'Université de Rennes
- **Starting date :** 2025-10-01
- **Duration of contract :** 12 months
- **Deadline to apply :** 2025-09-30

Contacts

- **Inria Team :** STIP-RBA (DGD-I)
- **Recruiter :**
  Le Graet Antoine / antoine.le-graet@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.

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.