

Physically based rendering expert – Brussels

Welcome to Rayference

Rayference is a Brussels-based SME active in research and development for radiative transfer modelling, satellite data processing and advanced retrieval algorithm development based on inverse modelling. We provide expertise in remote sensing data radiometric calibration and apply new metrological concepts to satellite observations dedicated to climate and environment monitoring. We are currently developing an open-source 3D radiative transfer model to support the Earth Observation scientific community involved in satellite calibration and validation.

Your role

We are hiring a **Physically based rendering expert** to join our 3D radiative transfer modelling team. You will be in charge of developing and implementing algorithms and data structures to simulate light propagation in water and clouds. We are seeking a highly motivated research software engineer enthusiastic about tackling challenging modelling problems. You will have the opportunity to implement new features and improve existing products.

Our tech stack is mainly Python and C++, with production computing done on a Docker Swarm cluster. We host our public software on GitHub where we provide community support.

You will be part of an international team where English is the working language and will present the outcome of your work at European R&D project meetings.

Your impact

Implementing state-of-the art volume Monte Carlo ray tracing algorithms incorporating advances made in various scientific communities.

Designing technical solutions for internal and external users.

Writing high-quality, maintainable, well-documented simulation code.

Supporting internal and external users in their usage of the products you'll contribute to.

What you bring

A university degree in Computer Science, Engineering, Physics, Mathematics, or equivalent with a demonstrated record of achievement in scientific programming.

3+ years of proven experience in C++ and Python programming for scientific applications.

Experience with physically based volume rendering methods.

A high level of autonomy and a sense of responsibility.

A good sense of teamwork.

The ability to write accurate and consistent technical documentation.

Fluency in English (written and spoken).

What makes you stand out

Experience with rendering systems (including, but not limited to, Mitsuba 3, PBRT, LuxCoreRender, ART, ...).

Knowledge of C++ Python binding libraries.

Excellent project management skills.

A history of involvement in open-source projects.

Experience with CI/CD.

General interest in science and scientific computing.

What we offer

At Rayference, you will enjoy working with a young and international team, in a flexible professional environment. You will have the opportunity to make an impact in addressing important scientific and societal challenges linked to climate monitoring and Earth Observation. We offer a competitive package, valuing work-life balance. You will collaborate with passionate and talented colleagues with whom you will share regular team-bonding activities. We believe in a long-term vision, supporting our staff in developing their best skills and build a career in this field.

How to apply

Please send to **recruitment@rayference.eu**:

- A cover letter explaining your interest in the position, highlight relevant qualifications and achievements, and including links to examples of relevant prior works;
- a detailed CV;
- email address and affiliations of 2 references.

Only applications sent to this email address will be considered. All documents shall be provided in English. Any questions related to this position can be sent to the same email address.

Women are encouraged to apply.