



# R&D Programmer Assistant - Real-time Neural Appearance for Video Games – La Forge (6months internship)

Bordeaux, France

Intern

Flexible Working Organization: Hybrid

## Company Description

### About Ubisoft

Ubisoft's 20,000 team members, working across more than 30 countries around the world, are bound by a common mission to enrich players' lives with original and memorable gaming experiences. Their commitment and talent have brought to life many acclaimed franchises such as Assassin's Creed, Far Cry, Watch Dogs, Just Dance, Rainbow Six, and many more to come. Ubisoft is an equal opportunity employer that believes diverse backgrounds and perspectives are key to creating worlds where both players and teams can thrive and express themselves. If you are excited about solving game-changing challenges, cutting edge technologies and pushing the boundaries of entertainment, we invite you to join our journey and help us create the unknown.

### Ubisoft Bordeaux

Founded in September 2017, Ubisoft Bordeaux works with passion on the biggest AAA's game in order to offer the best gaming experiences to our players. Today, the studio has more than 400 talents, from 15 different nationalities, who work on licenses such as Assassin's Creed, Beyond Good & Evil 2, plus other unannounced free-to-play games. We are also working on exciting technologies with the Anvil team, Online services teams and with La Forge who seek to validate the value of technological innovations.

### La Forge

As Ubisoft's research and development group, La Forge brings together experts from the industry and academic sector to prototype technological innovations and improve the game-making process. With this focus on applied research, we aim to fill the gap between theory and practice, while contributing to solving real-world problems through scientific publications.

## Job Description

In recent years, there have been significant advancements in the field of Neural Rendering. More specifically, recent works have demonstrated the ability of these techniques to effectively represent the material properties of 3D objects using a set of neural textures and a decoder network. However, despite this progress, these methods often overlook the issue of storage size as he learned neural features are usually stored in an uncompressed format. This makes the memory footprint of neural materials quite large making them unpractical for real-time applications. This becomes especially evident when we consider the memory capacity of mainstream hardware devices.

Our aim is to leverage the power of neural rendering techniques to encode complex, high-quality materials commonly seen in film production. However, the real challenge lies in enabling the decoding of these materials in real-time while significantly reducing the storage requirements of the neural textures.

Our goal is to find a solution that strikes a balance between the richness of the materials we can represent and the practical constraints of real-time rendering, all while ensuring a manageable storage size for neural textures.

[1] *Tewari, Ayush, Justus Thies, Ben Mildenhall, Pratul Srinivasan, Edgar Tretschk, Wang Yifan, Christoph Lassner et al. "Advances in neural rendering." In Computer Graphics Forum, vol. 41, no. 2.*

[2] *Zeltner, Tizian, Fabrice Rousselle, Andrea Weidlich, Petrik Clarberg, Jan Novák, Benedikt Bitterli, Alex Evans, Tomáš Davidovič, Simon Kallweit, and Aaron Lefohn. "Real-Time Neural Appearance Models."*

[3] *Vaidyanathan, Karthik, Marco Salvi, Bartłomiej Wronski, Tomas Akenine-Möller, Pontus Ebelin, and Aaron Lefohn. "Random-Access Neural Compression of Material Textures."*

## Qualifications

- You are a last year student at an engineering school or university research master.
- You have skills in machine learning.
- Knowledge of computer graphics is a plus.
- Your level of English allows you to work in an international team and to communicate easily with non-French speakers.

*Skills and competencies show up in different forms and can be based on different experiences, that's why we strongly encourage you to apply even though you may not have all the requirements listed above*

## Additional Information

### Process:

- Phone Interview with a recruiter
- Technical assesement
- Interview(s) with our internal teams

If your application is not retained, you will receive a negative answer.

*At Ubisoft, you can come as you are. We embrace diversity in all its forms. We're committed to fostering a work environment that is inclusive and respectful of all differences, we value diversity at our company and do not discriminate on the basis of race, ethnicity, religion, gender, sexual orientation, age or disability status. All personal informations will be treated as confidential according to the Employment Equity act.*

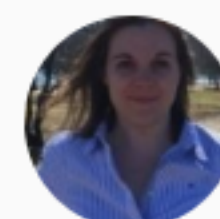
Check out [this guide](#) to help you with your application, and learn about our actions to encourage more diversity and inclusion.



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Posted by  
**Marie Piquot**

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