



UBISOFT

R&D Programmer Assistant - Learning distributions of policies: Application to bots that behave like humans – La Forge (6 months 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

Creating effective AI-controlled bots in video games remains an ongoing challenge. The conventional approach involves manually specifying a behavior tree that outlines the bot's actions and the conditions dictating transitions between behaviors. However, this method is labor-intensive and constrained by the behaviors we can pre-code. Consequently, there is a growing enthusiasm for leveraging AI techniques to streamline and enhance the process of bot creation

Reinforcement Learning is primarily concerned with creating algorithms that enable agents to autonomously acquire behaviors. The typical goal is to uncover an optimal policy that can address specific tasks, often defined by a reward function. Consequently, RL is well-suited for training bots to excel at well-defined objectives in video games, such as optimizing navigation speed, combat tactics, or target shooting.

However, it's important to note that the outcomes achieved through these techniques, while optimal, can sometimes yield behaviors that are highly artificial or lack credibility. In practice, we don't always want bots to be simply the best at a particular task; we desire them to exhibit a range of behaviors similar to human players, reflecting variety and adaptability

The primary aim of this internship is to develop novel algorithms that shift the focus from learning a single optimal policy to acquiring a distribution of policies, thereby capturing the diversity inherent in human behavior. This distribution will serve as a resource for game designers, enabling them to select

and incorporate a range of behaviors extracted from it into the game's bots or NPCs, enhancing the game's realism.

To extract this diversity of bot behaviors, we will leverage extensive datasets of player interactions. This approach recognizes that it is impractical to characterize the realism of behavior using a rigidly defined reward function. Instead, our developed models will rely on data-driven methods to discern what constitutes realism, allowing us to model a more authentic range of behaviors.

Qualifications

- You are a last year student of an engineering school or a university research master
- You have solid knowledge in mathematics and computer science
- You have skills in machine learning, deep learning, or reinforcement learning, and have mobilized them using suitable Python libraries
- 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

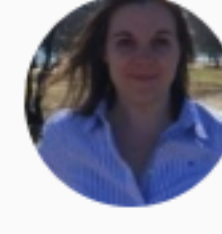
If your application is not retained, you will receive a negative answer.

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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