Nintendo European Research & Development

INTERNSHIP OFFER

DEEP LEARNING RESEARCH INTERN

THE COMPANY

Nintendo European Research and Development (NERD) is a French subsidiary of Nintendo. We are a company of around 95 employees who share a passion for creating key software technology and cutting-edge solutions for Nintendo Switch 2™ and other Nintendo platforms. In close collaboration with counterparts in Japan and the USA, we contribute to fields such as emulation, signal processing, content generation, computer vision, machine learning, system development, optimization and security to create solutions deployed on over a hundred million homogeneous devices. Come discover an engaging and welcoming work environment in the heart of Paris and join our unique team in its mission to put smiles on people's faces!

INTERNSHIP DESCRIPTION

As an intern, you will be working on one of the following three topics:

1. **Vision Language (VLM) Agent**
   - Perform a literature review of recent VLM architectures such as SIMA2 (1) or Game-TARS (2) while keeping in mind NERD's needs and specificities
   - Build a prototype with an open weight model (e.g: LLaVA (3))
   - Finetune it on a small and/or custom dataset

2. **Foundation-Model Exploration**
   - Survey the field of foundation models in the context of video games (e.g: TACO (4), VPT (5))
   - Improve our current in-house foundation model for the following downstream tasks:
     - Few-shot finetuning of our imitation learning pipeline
     - Zero-shot agents (no finetuning)
     - Anomaly detection in data streams

3. **Reinforcement learning**
   - Explore offline RL & Imitation Learning algorithms that make sense for our unique problems
   - Implement and compare various algorithms such as SQIL (6), IQL (7) and DQfD (8)
   - Run experiments in toy environments and real Switch games

Please list any experience you consider relevant to the topics above on your resume.

In your application, please also mention which topics you are interested in – it can be all of them -, but keep in mind that you will ultimately work on a single topic.

CANDIDATE PROFILE

NERD is an equal-opportunities employer. All characters are welcome, regardless of gender, ethnicity, religion, sexual orientation, ableness or age.

We are looking for candidates who are:

- Quick learners
- Creative
- Problem solvers
- Comfortable with iterative cycles of empirical experimentation
- Fast at prototyping
- Methodical in their experimental approach
- Concerned with reproducibility and code quality
- Understand the uncertainty inherent to machine learning
- Able to take initiative while working under guidance, and comfortable collaborating within a team

Desired skills:

- A good understanding of CNNs, Transformers, Attention, GANs, Diffusion Models…
- At ease with supervised, unsupervised & reinforcement learning
- Hands-on experience with PyTorch
- Theoretical and practical background in math
- Experience reading and understanding research papers, reviewing the state-of-the-art
- Proficiency in Python
- Familiarity with Linux / Windows

We expect candidates to be proficient in English, both written and spoken. The majority of employees speak French, but we also welcome non-French speaking candidates to apply.

Additional Information

This internship is located in central Paris, France, and candidates are expected to commute to our office.

The recruitment process will first start with a short interview with one of our engineers to evaluate your technical knowledge. If you pass the first interview, you will move onto a final interview on site with a few engineers and the manager of the team.

This internship offers a gross monthly stipend of 2,500€, meal vouchers to support daily lunch expenses, and paid leave in accordance with company policy.

We understand that AI assistants are common nowadays, but we kindly ask you to refrain from using them if you do not understand the answers they provide as it will become evident during the final interview when we dive into technical discussions.

Contact

If you believe you are the right person for this position, please send a resume and a cover letter to **apply@nerd.nintendo.com** with **DEEPINT2026** in the subject line.

Bibliography

1. *Scaling Instructable Agents Across Many Simulated Worlds.* **SIMA Team, Maria Abi Raad, Arun Ahuja, Catarina Barros, Frederic Besse, Andrew Bolt, Adrian Bolton, Bethanie Brownfield, Gavin Buttimore, Max Cant, Sarah Chakera, Stephanie C. Y. Chan, Jeff Clune, Adrian Collister, Vikki Copeman, Alex Cullum, Ishita Dasgu.** https://arxiv.org/abs/2404.10179.

2. *Game-TARS: Pretrained Foundation Models for Scalable Generalist Multimodal Game Agents.* **Zihao Wang, Xujing Li, Yining Ye, Junjie Fang, Haoming Wang, Longxiang Liu, Shihao Liang, Junting Lu, Zhiyong Wu, Jiazhan Feng, Wanjun Zhong, Zili Li, Yu Wang, Yu Miao, Bo Zhou, Yuanfan Li, Hao Wang, Zhongkai Zhao, Faming Wu, Zhengxuan Jiang, Weihao Tan,.** https://arxiv.org/abs/2510.23691.

3. *Visual Instruction Tuning.* **Haotian Liu, Chunyuan Li, Qingyang Wu, Yong Jae Lee.** https://arxiv.org/abs/2304.08485.

4. *Premier-TACO is a Few-Shot Policy Learner: Pretraining Multitask.* **Ruijie Zheng, Yongyuan Liang, Xiyao Wang, Shuang Ma, Hal Daumé III, Huazhe Xu, John Langford, Praveen Palanisamy, Kalyan Shankar Basu, Furong Huang.** https://arxiv.org/abs/2402.06187.

5. *Video PreTraining (VPT): Learning to Act by Watching Unlabeled Online Videos.* **Bowen Baker, Ilge Akkaya, Peter Zhokhov, Joost Huizinga, Jie Tang, Adrien Ecoffet, Brandon Houghton, Raul Sampedro, Jeff Clune.** https://arxiv.org/abs/2206.11795.

6. *SQIL: Imitation Learning via Reinforcement Learning with Sparse Rewards.* **Siddharth Reddy, Anca D. Dragan, Sergey Levine.** https://arxiv.org/abs/1905.11108.

7. *IQ-Learn: Inverse soft-Q Learning for Imitation.* **Divyansh Garg, Shuvam Chakraborty, Chris Cundy, Jiaming Song, Matthieu Geist, Stefano Ermon.** https://arxiv.org/abs/2106.12142.

8. *Deep Q-learning from Demonstrations.* **Todd Hester, Matej Vecerik, Olivier Pietquin, Marc Lanctot, Tom Schaul, Bilal Piot, Dan Horgan, John Quan, Andrew Sendonaris, Gabriel Dulac-Arnold, Ian Osband, John Agapiou, Joel Z. Leibo, Audrunas Gruslys.** https://arxiv.org/abs/1704.03732.