February 17, 2026

Finn Rietz
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Embark Studios
Stockholm

Dear Embark Studios Recruitment Team,

I am writing to express my strong enthusiasm for the Gameplay AI / ML Engineer position at Embark. The opportunity to work on ARC Raiders and contribute to building emergent AI systems in close collaboration with gameplay engineers and designers is genuinely exciting to me. Applying reinforcement learning to create expressive, controllable, and production-ready gameplay behaviors as part of an ambitious team of engineers, researchers, and designers is exactly where I see myself professionally.

I am a computer scientist and machine learning researcher specializing in RL and decision-making systems. While my Ph.D. work has been research-focused, I am increasingly orienting myself toward applied AI: building end-to-end training pipelines and infrastructure, designing complex reward systems, analyzing failure modes, and iterating until systems behave robustly in practice. I am most motivated when experimentation is fast and when improvements translate directly into better interactive experiences. Working at the intersection of ML research and gameplay engineering, where iteration speed and usability matter as much as algorithmic performance, strongly aligns with how I want to work.

My background combines deep RL expertise with hands-on experience in interactive and game-like environments. During my ML research internship with Microsoft Gaming (King), I worked on transformer-based RL agents for automated playtesting, focusing on inference-time optimization using bandits. This involved reward design, policy analysis, and building tooling to debug and evaluate agent behavior — experiences that directly relate to training and improving gameplay agents at Embark. I have also worked extensively on constrained RL and knowledge transfer, requiring careful reward shaping and RL-specific optimization strategies. While my professional C++ experience is more limited than my Python background, I bring over ten years of programming experience and a strong track record of rapidly mastering new languages and technical stacks. I am confident in my ability to ramp up quickly and contribute effectively within a C++ gameplay environment.

Beyond my technical profile, I bring a strong sense of ownership, clear communication, and a deep respect for collaborative game development. I enjoy working closely with designers, discussing behavior trade-offs, and translating high-level design intent into measurable objectives and trainable systems. I am structured and self-driven, but I thrive most in ambitious teams that iterate quickly and care deeply about quality. I would love to contribute both my RL expertise and my passion for games to Embark's AI efforts and help push the boundaries of what emergent gameplay systems can achieve.

Thank you very much for considering my application.

Sincerely yours,

Finn Rietz

FINN RIETZ

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Machine Learning Researcher

SUMMARY

I am a computer scientist (M.Sc.) and machine learning researcher specializing in reinforcement learning, deep representation learning, and decision-making under uncertainty. I have extensive hands-on experience designing, training, and evaluating reinforcement learning agents in simulated and interactive environments, including work on automated playtesting, reward shaping, curriculum learning, and agent behavior analysis, alongside building scalable ML systems in PyTorch. I am expected to graduate from Sweden's WASP Ph.D. program in 2026 and am seeking applied AI research or AI engineering roles. I am open to relocating anywhere in Sweden and for working 100% remote.

SKILLS

Core Expertise: Reinforcement Learning & Bandits; Applied Machine Learning & AI Systems; LLMs & Transformers; Deep Learning, Probabilistic & Bayesian Models (GPs, uncertainty modeling); Generative Models (Normalizing Flows, VAEs); Standard Architectures (MLPs, CNNs, GNNs, LSTMs) General ML (regression, classification, clustering, sequential data); ROS & Robotics

Coding & Infra: Python, Java, C#, familiarity with C++ for robotics, Bash, SQL; PyTorch, Keras, TensorFlow; Docker, Git, Linux, tmux; Cloud-based ML workflows (Google Cloud Platform: Compute Engine, Storage); Large-scale ML training, evaluation, validation, tracking, and deployment Unity (HCI, VR, Oculus Rift, Leap Motion); Unreal Engine (simulation)

Languages: GER (native), ENG (fluent), SWE (B2)

EDUCATION

9/2019 - 12/2021 **M.Sc. Computer Science** — **University of Hamburg, Germany**
Final grade 1.09 (4.0 US GPA), **highest honors**, Graduated top of class in 2021.

9/2015 - 04/2019 **B.Sc. Human Computer Interaction** — **University of Hamburg, Germany**
80% Computer Science, 20% Psychology, Final grade 2.09 (3.0 US GPA).

EXPERIENCE

4/2025 – 5/2025 **Pint of Science Organizer & Presenter** — **Pint of Science, Örebro**
- Helped with organizing and running the 2025 Pint of Science Festival.

8/2024 – 2/2025 **Machine Learning Research Intern** — **Microsoft Gaming (ABK), Stockholm**
- Researched bandit-based prompt-tuning of multi-task transformer reinforcement learning agents for automated playtesting, published at NeurIPS 2025.

6/2024 – 6/2024 **CIFAR Deep Learning & Reinforcement Learning Summer School** — **Vector Institute & Mila & Amii**
- Attended CIFAR's 2024 DLRL summer school on Deep Learning, Reinforcement Learning, NLP, Graph Neural Networks, Diffusion Models, and AI Safety.

9/2022 – 9/2022 **Gaussian Processes Summer School** — **University of Sheffield**
- Attended Summer School on Gaussian Processes, Bayesian Statistics, and Uncertainty Quantification.

1/2022 – ongoing **Ph.D. student in Computer Science** — **Learning Systems Group, Örebro University**
- RL research using modular probabilistic models for efficient knowledge transfer and adaptation.
- Led and managed the Reinforcement Learning Cluster; represented PhD students at WASP and Örebro University; supervised undergraduate theses; served as a teaching assistant in WASP's RL course.
- Completed 60 ECTS of PhD-level coursework in AI, machine learning, mathematics, and robotics.

9/2020 – 12/2020 stipend **Visiting Researcher** — **Intelligent Robotics Group, Umeå University**
- Developed an interface for easily conducting HRI experiments with Pepper robots that is actively used by researchers globally to this day.

11/2019 – 1/2020 stipend **Machine Learning Student Expert** — **DER SPIEGEL & Google Germany**
- Developed NLP model for classification of malicious web advertisements.

7/2019 – 12/2021 **Research Student Assistant** — **Knowledge Technology Group, University Hamburg**
- Developed hardware and software solution for enabling autonomous navigation with Pepper robots (blog).
- Webmaster, developer, and maintainer of Group website.
- Teaching Assistant for robotics project course.

2/2017 – 7/2019 **Student Employee: Full-stack SAP** **Otto Group IT**

- Full-stack SAP-based web development; minor DevOps tasks

SELECTED PUBLICATIONS

Conference	**Progress Constraints for Reinforcement Learning in Behavior Trees** ICRA 2026	**PDF**
Conference	**APC-RL: Exceeding Data-Driven Behavior Priors with Adaptive Policy Composition** ICLR 2026	**PDF**
Conference	**Prompt Tuning Decision Transformers with Structured and Scalable Bandits** NeurIPS 2025	**PDF**
Conference	**Prioritized Soft Q-Decomposition for Lexicographic Reinforcement Learning** ICLR 2024	**PDF**
Journal	**Hierarchical goals contextualize local reward decomposition explanations** Neural Computing and Applications (Springer Nature)	**PDF**
Journal	**WoZ4U: an open-source wizard-of-oz interface for easy, efficient and robust HRI experiments** Frontiers in Robotics and AI	**PDF**
Workshop	**Prompt-Tuning Bandits: Enabling Few-Shot Generalization for Efficient Multi-task Offline RL** **Best paper award.** IJCAI 2025 Workshop on Generalizing from Limited Resources	**PDF**
Workshop	**Towards Interpretable Reinforcement Learning with Constrained Normalizing Flow Policies** **Best paper runner up award.** ICRA 2024 Workshop on Human-Aligned RL	**PDF**