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github.com/alexpalms

Tech Skills

C/C++, Python, PyTorch, TensorFlow

Reinforcement Learning

Online, Offline, Imitation / Curriculum / Adversarial Learning, League Training

LLMs/SLMs, VLMs, VLAMs

Architecture, Alignment (SFT, RLHF), Parallelism (Triton, DDP, FSDP), Inference (Quantization, Speculative Decoding), Agentic Pipelines

Computer Vision

Object Detection, Semantic Segmentation, Behavior Classification

Modeling and Simulation

Multi-Body Dynamics, Atmospheric & Space Flight Dynamics, Robotics Systems, Sensor Fusion

Infrastructure & Tools

Docker, Kubernetes, CI/CD, Git, AWS/GCP

Soft Skills

Strategic Thinking

Aligning development with real-world impact

First-Principles and Out-of-the-Box Thinking

Reasoning from fundamentals, approaching problems with unconventional perspectives

Creative Problem Solving

Tackling open-ended, high-uncertainty challenges

Cross-Functional Collaboration

Bridging engineering, research, and domain experts

Self-Directed Leadership

Driving projects from concept to deployment

Technical Communication

Explaining complex AI to diverse audiences

Alessandro Palmas

Senior AI/ML Research Engineer

Senior AI Engineer with a strong track record of building production-grade systems, spanning reinforcement learning, simulation-based optimization, and multimodal learning applications. Over 15 years of experience developing intelligent systems for aerospace, defense, gaming, and robotics. I specialize in turning foundational research into reliable, scalable products, and have led high-impact efforts across agent design, training, validation, and AI-native software features.

Experience

2022/12 - present

Ubisoft La Forge - Montreal • Permanent Full-time

Senior AI/ML Engineer

I lead the development of next-generation AI/ML systems for AAA games, with a focus on Deep Reinforcement Learning and simulation-driven agent training. My work spans research, tooling, and deployment, delivering scalable learning pipelines and integrating AI behaviors into live game environments.

- Built and deployed Deep Reinforcement Learning systems for integration into AAA game environments.
- Designed scalable curriculum and multi-agent RL algorithms including League Training.
- Worked on Online, Imitation, Offline, and Hierarchical RL, currently exploring multimodal and LLM/VLM agents.
- Integrated AI models into proprietary engines for NPC behavior, testing, and live simulations.

2018/02 - present

Artificial Twin • Freelance

AI/ML Consultant

Designing and delivering advanced AI/ML systems across industries, with a focus on Reinforcement Learning, LLMs/VLMs/VLAMs, computer vision, and physics-based modeling.

- Built intelligent agents for decision-making and control using custom RL pipelines in simulation and real-world settings. Applied curriculum learning, imitation learning, and hybrid modeling.
- Explored applications of transformer-based LLMs and early Vision-Language-Action Models into end-user applications, supporting tasks from retrieval and reasoning to application control.
- Delivered vision systems for detection, segmentation, and semantic understanding in industrial and robotics use cases. Supported deployment on constrained compute environments.
- Maintained and evolved a suite of core libraries for ML (RL, CV, LLM), physics-based modeling and simulation, and spatial intelligence and computational geometry workflows.

Education

MSc by Research - Post-Grad Space Engineering
University Of Glasgow (2013)

MSc Aerospace Engineering
Milan Polytechnic (2010)

MSc Aerospace Engineering
Turin Polytechnic (2010)

BSc Aerospace Engineering
Turin Polytechnic (2008)

Publications

[Linkedin](#) | [Google Scholar](#)

Language

Italian (Native)

English (Professional)

Spanish (Intermediate)

French (Intermediate)

Interests & Passions

Building AI-based Tech

Open Source

History of Mathematics

2020/11 - 2024/12

DIAMBRA (Acquired in Dec 2024) • Part-time

Founder & Principal AI/ML Engineer

Founded and led DIAMBRA, a cloud-native platform for competitive multi-agent RL. Enabled researchers and practitioners to train, benchmark, and deploy agents in complex environments.

- Built a distributed platform for tournament-style benchmarking with support for cloud inference, model submission, and automated evaluation.
- Developed cross-platform environments based on competitive fighting games. Supported workflows for curriculum design, human-in-the-loop training, imitation learning, agent-vs-agent/human competition, and offline experience replay.
- Released core tools as open-source Dockerized packages, fostering a community of RL researchers and ensuring reproducibility and real-world applicability.
- Led DIAMBRA to acquisition, validating the product's technical foundation and commercial relevance.

2017/07 - 2022/11

Nurjana Technologies • Permanent Full-time

Principal Research Engineer

Led development of AI-driven autonomous systems, perception, and simulation for aerospace and defense applications. Delivered real-world solutions across aerial ISR, satellite collision avoidance, and robotics, integrating ML, embedded systems, and physical modeling.

- Deployed real-time computer vision models (object detection, segmentation, tracking, activity recognition) on edge devices (e.g., NVIDIA Jetson) for drones operating in GNSS-denied zones.
- Built hardware-in-the-loop pipelines with Unreal Engine to validate vision-based navigation, target detection, and collision avoidance in photorealistic environments.
- Developed custom flight control, vision-based landing, and obstacle avoidance for autonomous aerial platforms. Integrated vision, control, and simulation into deployable systems.
- Designed software for orbit propagation, attitude dynamics, conjunction analysis, maneuver planning, and sensor tasking. Contributed to operational space situational awareness systems.

2019/01 - 2022/09

NATO • Contract Part-time

AI/ML & Simulation Advisor and Industry Expert

Contributed to NATO initiatives by evaluating and guiding the integration of advanced technologies, particularly artificial intelligence and machine learning, into emerging capability development. Supported collaboration between government and industry to identify high-impact, technically feasible solutions aligned with NATO's operational requirements in areas such as autonomous systems, sensor fusion, and decision-making support under uncertainty.