Garin Curtis

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About me

I'm a junior machine learning engineer and creative technologist with hands-on experience in real-time systems, generative audio-visual media, and interactive installations. I specialise in developing innovative ML pipelines using PyTorch and Python, with a strong foundation in both software engineering and model experimentation. My work spans production-ready tools for artistic projects, academic research, and immersive technology. I excel in collaborative, cross-disciplinary teams and bring excellent problem-solving skills with a practical, solution-oriented mindset.

Technical Skills

Languages: Python, JavaScript, C++, C#, GLSL, HTML, CSS

ML & AI Frameworks: PyTorch, HuggingFace, Transformers, OpenCV, scikit-learn, NumPy, Label Studio, Ircams's RAVE.

Generative Systems: Diffusion models (Stable Diffusion, DreamBooth), VAEs, GANs, NeRFs.

Interactive Tools: GPGPU compute (Three.js, WebGL, GLSL), TouchDesigner, Pure Data, Max/MSP, Unity and Unreal engine 5.

Web & Frontend: React, Next.js, Three.js, GSAP, Framer Motion, Lenis, WebSockets, FastAPI, Vercel.

Tools & DevOps: Git, Docker, Runpod, MLflow, OSC, REST APIs.

Experience

Glitching he Gaze - Michelle Marshall - University for the Creative Arts   *May 2025 - Present*
Freelance Machine Learning Engineer

- Developed a generative AI system and creative toolchain for critically reimagining women's representation in advertising, combining custom dataset curation, LoRA model fine-tuning, and interactive interface design to challenge normative visual outputs through intentional aesthetic disruption.
- Tools used: Python, PyTorch, Label Studio.

Installation at CVPR 2025 AI Art Gallery   *May - June 2025*
Fullstack Machine Learning Engineer

- Designed and deployed a real-time interactive control system for AI-driven image generation on a cloud GPU backend using Docker, integrating FastAPI, WebSockets, and OSC to dynamically control a UNet-based diffusion model via XY spatial input and machine learned parameter mapping.
- Tools used: Python, PyTorch, FastAPI, Websockets, sklearn, Javascript, Runpod, Docker, Html, and CSS.

Installation at London Tech Week 2025   *May - June 2025*
Software Engineer

- Presented and adapted my dissertation project for London Tech Week 2025, integrating real-time body tracking with a U-Net architecture in a Stable Diffusion model to enable interactive generative imagery driven by physical movement.
- Tools used: Python, PyTorch, Touchdesigner.

Portfolio Website   *April - May 2025*
Frontend Developer

- Built an interactive portfolio website using Next.js, Three.js, and GLSL, integrating advanced GPGPU compute shaders for real-time particle systems and visual effects. Implemented smooth scroll and transitions with GSAP, Framer Motion, and Lenis, optimising performance for GPU-intensive rendering and cross-device compatibility.
- Tools used: Next.js, React, Javascript, GSAP, Framer Motion, Vercel, Html, CSS

Ancestral (R)evocations - Erika Tan - Featured at Tate Modern   *ancestral-(r)evocations* ↗
Freelance Software Engineer   *July 2024 – October 2024*

- Designed and implemented a real-time interactive audio system using Ircam's RAVE model trained on a custom dataset recorded at the Tate Modern, integrating generative ML, metadata mapping, and granular synthesis to help artist Erika Tan to realise her semantic sound data sonification installation in the Tate Modern Tanks
- Tools used: Python, PyTorch, Pure Data, and OSC.

BNP Paribas   *Bristol*
Funding Manager   *July 2021 – July 2023*

- Worked in a fast-paced environment, delivering accurate, detail-oriented work while adapting quickly to new tools and collaborating effectively across operations, sales, and support teams.

HSBC   *Bristol*
Financial Administrator   *Oct 2018 – April 2021*

- Handled sensitive financial data with precision and accountability, independently resolving complex cases under pressure while ensuring clear communication, accurate documentation, and rapid adaptation to new systems and procedures.

Education

University of the Arts London - Creative Computing Institute   *Sept 2023 – Dec 2024*
MSc Creative Computing (1st)

- Focus: Machine learning for creative systems, real-time audio/visual interaction, generative AI, neural rendering.

University of Cardiff   *Sept 2014 – June 2018*
BEng Mechanical Engineering (2:1)

Masters Dissertation

Novel Interface for Real-Time Control of Diffusion Models   *beyond-prompts* ↗

- Built an expressive real-time interface for manipulating diffusion model outputs (image generation) beyond text prompts.
- Implemented novel interactive techniques for manipulating the computational graph during inference and trained fine-tuned models using Dreambooth. Supervised by Phoenix Perry.
- Tools used: Python, PyTorch, Touchdesigner, OSC.

References available upon request