GIACOMO GEROTTO

Motion Capture TD · Shoot, Capture & Pipeline

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Based in Europe, open to relocation and travel · Available 4 weeks from offer acceptance

PROFILE

Motion capture technician with five years at GPEM, the sole Vicon distributor for Italy, Malta and the Balkans: I run and maintain capture for game studios, immersive productions and live events through its entertainment division (GPEM Entertainment, formerly Omnicap), and I install, train and support customers on Vicon, Xsens, Manus, Captury and Faceware, from entertainment studios to API integrations. I set up and tune the volume for each session, keep data quality up during recording (markers, props, fingers, reflections, timecode), troubleshoot live, and own post-capture processing: labelling, solving, cleanup and retargeting to the client's rig, including MetaHuman. Hands-on with Vicon (setup, capture, processing), Xsens, head-mounted cameras and MotionBuilder, plus real-time streaming into Unreal and Unity. I build my own tools in Python and C#, increasingly with AI-assisted development (Claude Code, Cursor) where I design, review and own the code. I work closely with Vicon's entertainment support and training teams in the UK.

CORE SKILLS

- **Capture technology & studio operations:** volume layout and calibration per session, threshold/strobe and frame-rate tuning, marker sets for body and fingers, tracked props and objects, custom marker layouts, 3D-printed mounts and rigs for unusual objects and wearables (Bambu Lab, Cura), reflection management, temporary volume installs, on-set troubleshooting during recording
- **Sync & real-time:** genlock, timecode and camera tracking (Blackmagic SDI camera with tracking crown → Vicon Lock → Evertz timecode → Blackmagic sync generator), Tentacle Sync timecode, split body/face capture locked to audio, Lab Streaming Layer, live streaming to Unreal Engine and Unity, MotionBuilder live retarget, on-set previs on client characters, hot-standby redundancy for live shows
- **Post-capture processing:** labelling, solving and cleanup in Vicon Shōgun Post, retargeting (MotionBuilder, Shōgun, MetaHuman), FBX delivery, data QC, diagnosing skeleton/scale issues across Maya, Blender and Unreal
- **Systems:** Vicon Shōgun Live & Post, Nexus, Valkyrie / Vantage / Vero, Lock Lab · Xsens MVN Analyze (Awinda) · Manus Quantum Metagloves · Faceware Mark IV HMC with Faceware Studio, Analyzer and Retargeter · Captury · Movella DOT
- **Other capture & XR:** iPhone ARKit face capture, Rokoko, HTC Vive, Meta Quest / Oculus
- **Tools & pipeline:** Python (working level, used for tools and integrations), C# (Unity plugins and editor tools), Shōgun Post and Maya scripting, Blender automation; AI-assisted development with Claude Code and Cursor, with design and code review done by me
- **DCC & engines:** MotionBuilder, Maya, Blender, Unreal Engine, Unity

TOOLS AND PIPELINE WORK

- **Markerless-to-Nexus integration** (2026): integrated Pose2Sim, OpenSim and FreeMoCap into a Vicon Nexus workflow, so markerless results can be processed alongside optical data
- **MIMOSE capture platform** (2024–2026; named Technical & Quality Lead in the project documents): contributed to the Python acquisition dashboard (per-device monitors, synchronised recording) and extended it with the LSL LabRecorder for multi-stream recording of Vicon, IMU, EMG and RGB-D data
- **FBX/GLB export pipeline** (2026): scripts exporting animated characters from Unity through Blender to FBX and GLB
- **Genlock, timecode and camera tracking** (2023–2024): built GPEM's in-house know-how: specified and bought the kit, worked out the integration closely with Vicon's engineers, wired Blackmagic SDI camera → Vicon Lock → Evertz timecode → Blackmagic sync generator with a tracked camera crown for demos, and supported Digital Kinetics (Zagreb) and Rupture (Malta) on timecode and sync
- **Shōgun Post and Maya scripts:** automation of repetitive capture and cleanup steps
- **Unity IK plugin** (2021–2022, C#): drives a full-body avatar from 6–11 live Vicon rigid bodies, with in-build subject calibration and editor tools for character setup
- **Support knowledge-base chatbot** (2026): AI assistant answering technical support questions across GPEM's whole product range: Vicon (main software suite), Xsens, Manus, Captury, Theia and Cometa

EXPERIENCE

GPEM srl — Genoa, Italy · motion capture systems: distribution, R&D and services (entertainment division: GPEM Entertainment, formerly Omnicap) Jul 2021 – present

Innovation Manager (continuing to lead client mocap shoots) Jan 2025 – present

- Run client shoots end to end: volume setup, capture, troubleshooting, processing and delivery
- Technical lead of MIMOSE, a publicly funded multi-sensor synchronised capture platform built with two universities and a software house
- Build internal tools and integrations, and test new capture, markerless and AI technologies

Support & Technical Project Manager 2024 – 2025

- Led technical delivery of mocap productions for Italian and European game studios, from system design and on-set operation to data delivery
- Split body/face performance capture for GNVR Experience: Vicon body and fingers, Faceware HMC and voice, Tentacle Sync timecode, recorded into Unity
- Technical support and training across Vicon, Xsens, Manus, Faceware and Captury for studios, universities and research institutes
- Advanced integration training with Vicon and Epic Games in Oxford and London

Support & Technical Motion Capture Specialist Jul 2021 – 2024

- From joining in 2021, tasked with growing GPEM, then mostly a team of biomedical engineers serving clinical and research labs, into entertainment and software development: technical pre-sales and sales enablement for film and game studios, research centres, VR/XR, game-engine and robotics integrations and product API integrations, alongside a capture service line whose clients now include several of Italy's largest game studios; installed Vicon systems, trained teams on site on Vicon and Shōgun, and still support customers including Stormind Games, Digital Kinetics (Zagreb), Rupture (Malta) and MCAST; installed Faceware and Manus systems at NABA, Milan, trained the team on site and supported them; supported three Faceware systems for the customers of French reseller PROGISS, at their request
- Ran capture sessions and post-production, from GPEM's first temporary volume to its permanent studio; installation, training, technical support and API integration across GPEM's full product range (Vicon as the main line, plus Xsens, Manus, Captury and Faceware Studio, Analyzer and Retargeter) for game and animation studios, universities and research labs
- Built and operated a live real-time avatar pipeline for a 20-minute single-take show (Xsens + Manus → MotionBuilder → Unreal) with a hot-standby machine
- Underwater markerless tracking for a diver-training simulator (Captury, 8 cameras in sealed housings at 5 m): feasibility tests and Unity integration

Game Development Instructor — Tree Open, Milan 2021

- Designed and taught a full game development course for 20+ students

SELECTED PRODUCTIONS as service provider via GPEM · clients under NDA anonymised

- **Card game, dealer capture to Unreal/MetaHuman** (2026): body + 10-marker-per-hand fingers on 26 Vicon cameras (16 Valkyrie VK26 + 10 Vero); live retarget to Unreal for on-set previs; led cleanup, retargeting and FBX delivery; diagnosed bone-scaling issues at Unreal import with Maya and Blender
- **Remote live workshop for IIDEA** (Jan 2026): designed the live streaming pipeline, three PCs wired directly over NDI (NDI Tools) into an OBS multi-view on Discord; 2 performers with 10-marker hands, 5 tracked props and a tracked virtual camera, solved and streamed onto MetaHumans in Unreal
- **Football app, player and ball capture** (2025): ball tracked for position and rotation with ~30 flat markers in six clusters after benchmarking retroreflective tapes; 150 Hz; circularity threshold and environment drift tolerance tuned in reconstruction
- **Black Cats & Chequered Flags** (MIAT, 2024; Venice Immersive 2025, Silverstone Museum): 3 performers incl. a child; contact-accurate rigs from client car models; cleanup and retargeting onto 3 characters
- **Unreleased action game** (European publisher's studio, 2023–2024): 4 shoot days; up to 3 performers, tracked rifles and furniture, finger capture on 2 performers simultaneously
- **MotoGP 26, Milestone** (shot 2025, released 2026): up to 3 performers on a real motorcycle; low cameras, matte-taping and per-camera tuning against occlusion and reflections
- **Weightless** (Vnova/ImmersiX and Chokolate TV, 2024): Xsens + Manus shoot by a remote crew I trained; sole Shōgun Post cleanup of US-captured body and finger data
- **Novo Nordisk 100th anniversary** (Rome, 2023): live real-time avatar, 20-minute single take

EDUCATION, TRAINING AND LANGUAGES

- **Bachelor's-level degree (Diploma accademico di I livello), New Technologies for Art** — Accademia di Belle Arti di Brera, Milan · 2018–2021
- **Computer Graphics & Game Technologies** — BigRock (Autodesk Authorised Training Centre) · 2016–2017
- **Advanced training** — Vicon and Epic Games (mocap integration, real-time pipelines), Oxford and London · 2024–2025 · **Data science course** — Coursera
- **Languages:** Italian (native) · English (professional working proficiency)