Alexandre Symeonidis-Herzig

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Highlights

- PhD candidate at CVSSP, University of Surrey: 3D human motion generation and photorealistic avatars
- First-author papers at BMVC 2026 and ICCV Workshops 2025 (oral), co-author at ECCV 2026
- Research engineer at Signapse (2026): 3DMM-driven Gaussian Splatting and video diffusion avatars

Publications

M3T: Discrete Multi-Modal Motion Tokens for Sign Language Production
A. Symeonidis-Herzig, J. Low, Ö. Mercanoğlu Sincan, R. Bowden
arxiv.org/abs/2603.23617 (BMVC, Nov 2026)

Separate discrete tokens for body, hands, and face (SMPL-X + FLAME), generated from text by a transformer; state-of-the-art 3D sign motion that keeps the facial expressions earlier methods lose.

SignSparK: Efficient Multilingual Sign Language Production via Sparse Keyframe Learning
J. Low, **A. Symeonidis-Herzig**, M. Ivashechkin, Ö. Mercanoğlu Sincan, R. Bowden
10.1007/978-3-032-37369-4_35 (ECCV, Sept 2026)

Generates full 3D signing from sparse keyframes with flow matching, across four sign languages, rendered with photorealistic Gaussian Splatting avatars.

VisualSpeaker: Visually-Guided 3D Avatar Lip Synthesis
A. Symeonidis-Herzig, Ö. Mercanoğlu Sincan, R. Bowden
arxiv.org/abs/2507.06060 (ICCV Workshops, Oral, Oct 2025)

Trains photorealistic 3D avatar lip motion through differentiable Gaussian Splatting renders and a lip-reading perceptual loss, giving clearer, more readable mouth shapes.

Experience

Computer Vision Research Engineer: 3DGS & Diffusion Avatars *Remote, GB*
Signapse *Mar 2026 – Sept 2026*

- Trained mesh-anchored Gaussian Splatting avatars that render signing in real time from any viewpoint
- Worked on a video diffusion pipeline that refines 3DGS renders into photorealistic avatar video
- Fitted a merged SOMA body and FLAME head model to multi-view captures of a full signer dataset
- Designed a portable multi-view capture rig that recorded 10,000 signs on site in 4 months

PhD Researcher *Guildford, GB*
University of Surrey, CVSSP *Sept 2023 – present*

- Leading multi-view capture and large-scale 3DMM fitting for the lab's sign language datasets
- Multi-node training on NVIDIA and AMD clusters; wrote two funded Isambard-AI proposals (20,000 GPU-hours)
- Contributing to SLTK, the lab's open-source sign language toolkit

Education

University of Surrey *Guildford, GB*
PhD in Computer Vision *Sept 2023 – 2028*

- Expected graduation: early 2028
- Thesis (working title): Preserving Face, Body, and Hand Information in Sign Language Production
- Supervised by Prof. Richard Bowden and Dr. Özge Mercanoğlu Sincan

University of Surrey *Guildford, GB*
BEng (Hons), First Class in Electronic Engineering *Sept 2019 – June 2023*

- Thesis: real-time photorealistic avatar driven from monocular video (MediaPipe, MetaHumans)

Skills

3D Vision: Gaussian Splatting, differentiable rendering, 3DMM fitting (SOMA / SMPL-X / FLAME)

Generative: Video diffusion, flow matching, FSQ and VQ-VAE tokenisation, autoregressive transformers, LLM fine-tuning

Engineering: Python, C++, PyTorch (multi-node DDP), CUDA and ROCm, Diffusers, vLLM, SLURM, Apptainer, Docker, W&B

Languages: English (Fluent), German (Proficient), Greek (Proficient), Dutch (Proficient), BSL (Level 1)

Other Experience

Teaching Assistant, Surrey (2023–): Labs in C programming, algorithms, and logic for 50–200 students

Summer Research Intern, Surrey (2022): Multi-agent RL for power control of cellular-connected UAVs in PyTorch

Associate Development Engineer, Sky (2021–22): Production OCR on live video for automated device testing

Talks and Service

ECCV 2026: ACVR Workshop Doctoral Consortium talk on motion tokens and 3D signing avatars

ICCV 2025: VisualSpeaker oral at the CV4A11y Workshop

Reviewing: IEEE FG, BMVC