Lucas Mercier

Laboratoire d'Innovation ouverte en technologie de la santé
Ecole de technologie supérieure - ETS Montreal
GitHub LinkedIn Google scholar ResearchGate
Portfolio https://www.lucasmercier.me/

EDUCATION

École de technologie supérieure (ÉTS) - Montréal, Canada — oct 2021 - **present**
- Ph.D. in computer science
- Developed acquisition software to synchronize RGB and MoCap systems; built inpainting pipeline to remove reflective markers from images; benchmarked and improved SOTA monocular 3D pose estimation models for clinical gait parameters.
- Supervisors: Carlos Vázquez, Neila Mezghani, Thierry Cresson

Institut supérieur d'électronique de Paris (ISEP) - Paris, France — 2016 - 2021
- Engineering school (equiv. M.Sc.)
- Specialization: Data analysis and artificial intelligence (years 2 & 3)
- End of track research project: Myelin sheath segmentation using UNet for sclerosis estimation

Wrexham University - Wrexham, UK — Jan 2018 - May 2018
- Exchange semester - Software and mobile development

RESEARCH PROJECTS

Main topics: Computer vision, 3D Human pose estimation, Gait analysis, Machine learning, Image and video processing, Motion analysis, AI for healthcare

Related projects

Visiting PhD Student - Paris, France — Jan 2026 - Mar 2026
- Finetuned and benchmarked SOTA pode estimation model for gait parameter estimation on pathological population
- Improved these 2D-to-3D lifting models by integrating visual features from RGB frames using multi-scale deformable offset sampling

Pose Estimation Benchmarking Framework - Closed-source — 2023 - present
- Unified plugin-oriented framework for training and evaluating SOTA 2D/3D pose estimation models, designed for reproducibility and fair cross-model comparison.
- Used across multiple PhD projects and an industry collaboration for clinical markerless motion analysis.

R&D Computer Vision Intern - Ivry-sur-Seine, France — Feb 2021 - Aug 2021
- Implemented SOTA multi-object tracking algorithms (MOTNeuralSolver, FairMOT) for person tracking in autonomous retail environments.
- Developed a cross-camera object re-identification pipeline using TorchReID.
- Built a benchmarking framework to compare algorithm performance across metrics and camera configurations.

PUBLICATIONS

JOURNALS

2026 Mercier L.,Cresson T. ,Gervais S. ,Mezghani N. ,Vázquez C. , Effect of markers in training dataset for markerless applications in biomechanics, Journal of Biomechanics [DOI]

CONFERENCES

2026 Mercier L.,Marois B. ,Fuentes A. ,Cagnin, A. ,Cresson T. ,Vazquez, C. , Using knee kinesiography to train markerless pose estimation models for first-line kinematic assessment in knee osteoarthritis, OARSI World Congress on Osteoarthritis · April 2026 [DOI]

2025 Mercier L.,Cresson T. ,Mezghani N. ,Vázquez C. , Framework for the application of markerless motion capture to biomechanics, Multidisciplinary Biomechanics Journal · 2025 [DOI]

2025 Naaïm A. ,Rozaire J. ,Mercier L.,Begon M. ,Cherni Y. , Markerless motion capture accuracy in children with cerebral palsy and typically developing children, Multidisciplinary Biomechanics Journal · 2025 [DOI]

2025 Naaim A. ,Rozaire J. ,Mercier L.,Duprey S. ,Begon M. , Evaluation of 3D marker-less motion capture precision in upper limb children movement, International Society of Biomechanics · Stockholm, Sweden · 2025

2025 Mercier L.,Cresson T. ,Mezghani N. ,Vázquez C. , Étude de l'impact de la présence des marqueurs pour l'estimation de la pose humaine, 92e Congrès de l'Acfas · Montréal, Canada · 2025

TEACHING EXPERIENCE

Teaching assistant - ETS - Montreal

- GT411 - Digital Imaging (Fall 2024, Winter 2025, Fall 2025)

GRANTS & AWARDS

Bourse de collaboration de recherche - Société de Biomécanique 2025
Excellence grant for scientific communication activities - ÉTS Library 2024

SKILLS

Languages: Python, JS & TypeScript, SQL / Postgres, JAVA, C#
CV & ML: PyTorch, TensorFlow, OpenCV, scikit-learn, ONNX
Tools: Git, Docker, Linux, SLURM (Compute Canada)