

Jose Luis Ponton

PH.D. STUDENT · COMPUTER ANIMATION · XR · COMPUTER GRAPHICS

Esplugues de Llobregat, Barcelona, 08950, Spain

✉ josluispm2@gmail.com | 🏠 josluisponton.com | 📧 JLPM22 | 🌐 jlponton | 🎓 Jose Luis Ponton

Education

Universitat Politècnica de Catalunya

Barcelona, Spain

PH.D. IN COMPUTING

Dec. 2022 - Present

- Expected graduation date: December 2025.
- Researching and developing deep learning-based tools to advance human motion understanding and provide high-quality avatar motion in VR applications.
- Supervisors: Nuria Pelechano and Carlos Andujar.
- Awarded a Ph.D. scholarship FPU 2021 (code FPU21/01927) from the Spanish Administration.

Universitat Politècnica de Catalunya

Barcelona, Spain

M.SC. IN INNOVATION AND RESEARCH IN INFORMATICS

Sep. 2020 - Jul. 2022

- Grade: 9.15/10.00
- Specialization in Computer Graphics and Virtual Reality
- Thesis: Motion Matching for Character Animation and Virtual Reality Avatars in Unity

Universitat Politècnica de Catalunya

Barcelona, Spain

B.S. IN COMPUTER SCIENCE AND ENGINEERING

Sep. 2016 - Jul. 2020

- Grade: 9.03/10.00 (Rank 3 of 239).
- Thesis: Navigation and collaboration techniques for Virtual Reality.

Experience

VIA - Max Planck Institute for Informatics

Saarbrücken, Germany

RESEARCH INTERN

May. 2024 - Jul. 2024

- Researched physics motion priors for deep learning pose and motion authoring tools.
- Supervisor: Prof. Dr. Christian Theobalt.

Hyper Online (YCombinator startup)

(Remote) San Francisco, California, USA

FREELANCE

Feb. 2024 - Present

- Developed a pipeline and retargeting method for animating full-body rigged 3D avatars with hands from positional joint information extracted from cameras.

ViRVIG Research Group - Universitat Politècnica de Catalunya

Barcelona, Spain

RESEARCHER

May. 2021 - Nov. 2022

- Researched real-time motion synthesis for character animation and VR avatars: Deep Learning, Motion Matching, IK and Motion Capture.
- Developed an open-source Unity package to easily integrate VR self-avatars to any application. <https://github.com/UPC-ViRVIG/AvatarGo>

CYENS Centre of Excellence

Nicosia, Cyprus

RESEARCH INTERN

Jul. 2022 - Sep. 2022

- Researched deep learning for data-driven character animation from sparse input data.
- Supervisor: Dr. Andreas Aristidou.

ViRVIG Research Group - Universitat Politècnica de Catalunya

Barcelona, Spain

RESEARCH INTERN

Apr. 2019 - Apr. 2021

- Developed collaborative VR and AR tools for visualizing and interacting with architectural designs. Project in collaboration with Temple Expiatori de la Sagrada Família.

Skills

Programming	Python, C#, C++, \LaTeX , R, CUDA, GLSL/HLSL
Game Engines/Libraries/SW	Unity, PyTorch, Blender, Git, SteamVR, Oculus, ARCore
Languages	English, Spanish, Catalan

Publications

Stretch your reach: Studying Self-Avatar and Controller Misalignment in Virtual Reality Interaction

JOSE LUIS PONTON, REZA KESHAVARZ, ALEJANDRO BEACCO, NURIA PELECHANO

CHI conference on Human Factors in Computing Systems. May. 2024. Hawaii, USA. (10.1145/3613904.3642268)

Exploring the Role of Expected Collision Feedback in Crowded Virtual Environments

HAORAN YUN, JOSE LUIS PONTON, ALEJANDRO BEACCO, CARLOS ANDUJAR, NURIA PELECHANO

31th IEEE Conference on Virtual Reality and 3D User Interfaces. Mar. 2024. Orlando, USA. (10.1109/VR58804.2024.00068)

SparsePoser: Real-time Full-body Motion Reconstruction from Sparse Data

JOSE LUIS PONTON, HAORAN YUN, ANDREAS ARISTIDOU, CARLOS ANDUJAR, NURIA PELECHANO

SIGGRAPH Asia 2023. Dec. 2023. Sydney. Australia. ACM Transactions on Graphics. (10.1145/3625264).

Fitted avatars: automatic skeleton adjustment for self-avatars in virtual reality

JOSE LUIS PONTON, VÍCTOR CEBALLOS, LESLY ACOSTA, ALEJANDRO RÍOS, EVA MONCLÚS, NURIA PELECHANO

Virtual Reality. Springer. Jul. 2023. (10.1007/s10055-023-00821-z)

Animation Fidelity in Self-Avatars: Impact on User Performance and Sense of Agency

HAORAN YUN, JOSE LUIS PONTON, CARLOS ANDUJAR, NURIA PELECHANO

30th IEEE Conference on Virtual Reality and 3D User Interfaces. Mar. 2023. Shanghai, China. (10.1109/VR55154.2023.00044)

Combining Motion Matching and Orientation Prediction to Animate Avatars for Consumer-Grade VR Devices

JOSE LUIS PONTON, HAORAN YUN, CARLOS ANDUJAR, NURIA PELECHANO

ACM SIGGRAPH/Eurographics Symposium on Computer Animation (SCA). Sep. 2022. Durham, United Kingdom.

Computer Graphics Forum. (10.1111/cgf.14628).

AvatarGo: Plug and Play self-avatars for VR

JOSE LUIS PONTON, EVA MONCLUS, NURIA PELECHANO

Eurographics 2022 - Short Papers. May. 2022. Reims, France. (10.2312/egs.20221037).

Selected Projects

Please, visit my website for a complete list of my projects: <https://joseluisponton.com/projects>

Motion Matching (over 300 stars on GitHub)

Motion Matching implementation for the Unity game engine. It includes a spring-based character controller, BVH-accelerated search, inertialization blending, automatic and customizable feature extraction/selection, foot lock, tags, among other features.

<https://github.com/JLPM22/MotionMatching>

PyMotion

Python library for manipulating and processing motion data in NumPy or PyTorch. It is designed to facilitate the development of neural networks for character animation. Features: quaternion operations and conversions to other rotation representations; dual quaternions; BVH importer/exporter; skeletal operations such as forward kinematics. <https://github.com/UPC-ViRVIG/pymotion>