Jose Luis Ponton

Ph.D. Student · Computer Animation · XR · Computer Graphics

Esplugues de Llobregat, Barcelona, 08950, Spain

✉ joseluispm2@gmail.com | 🏠 joseluisponton.com | ⊞ JLPM22 | 🔗 jlponton | 📢 Jose Luis Ponton

Education

Universitat Politècnica de Catalunya — *Barcelona, Spain*

Ph.D. in Computing — *Nov. 2022 - Present*
- 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.

Research Experience

XR4ED - Universitat Politècnica de Catalunya — *Barcelona, Spain*

Research And Development Engineer — *Jan. 2023 - Present*
- Researching and developing a framework for animating virtual human avatars in the context of XR applications for education.
- European Project https://cordis.europa.eu/project/id/101093159

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

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

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