

Eduardo Alvarado

PH.D. IN VIRTUAL AVATARS AND HUMAN MOTION
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Education

Ph.D. in Virtual Avatars and Human Motion

ÉCOLE POLYTECHNIQUE, LIX

Palaiseau, France

Oct. 2020 - Oct. 2023

- Topic: Efficient Models for Human Locomotion and Interaction in Natural Environments.
- Supervisors: **Prof. Damien Rohmer** and **Prof. Marie-Paule Cani**.
- Funding: European Union's Horizon 2020 Research Programme. Marie Skłodowska-Curie Grant Agreement n. 860768 (CLIFE project).

M.Sc. in Embedded Systems and AI

ALBERT-LUDWIGS-UNIVERSITÄT FREIBURG

Freiburg, Germany

Apr. 2017 - Nov. 2019

- Framework: Robotics, Computer Vision, Machine Learning, Deep Learning and Reinforcement Learning.
- Thesis: Deep Multimodal Learning for Autonomous Driving.
- Supervisors: **Prof. Joschka Bödecker** and **Prof. Abhinav Valada**.

B.Sc. in Electronics and Automation Engineering

UNIVERSIDAD CARLOS III - POZNAN UNIVERSITY OF TECHNOLOGY (ERASMUS)

Madrid, Spain

Sep. 2010 - Sep. 2014

- Framework: Digital/Analog Electronics, CS, Robotics and Control Engineering.
- Thesis: Development of a localization-based AR framework in C++ for smart glasses.
- Supervisors: **Prof. Angel Garcia Crespo**.

Academic & Industry Experience

Postdoctoral Researcher in Virtual Avatars and Human Motion

MAX PLANCK INSTITUTE FOR INFORMATICS

Saarbrücken, Germany

Jan. 2024 - Currently

- Research on plausible human avatars and locomotion models using data-driven and physics-based approaches.
- Supervisors: **Prof. Christian Theobalt** and **Dr. Marc Habermann**.
- Parental Leave Breaks** - 7 months (Sep. 2024 - Apr. 2025) and 5 months (Aug. 2026 - Dec. 2026)

Ph.D. Intern

UBISOFT LA FORGE

Bordeaux, France

Mar. 2023 - Jun. 2023

- Topic: Development of authoring tools for the production stages of crowd/character animation.

Research Scientist - AI for Material Rendering

INSTALOD GMBH

Stuttgart, Germany

Jun. 2020 - Sep. 2020

- Research on AI (Image Processing, GANs) for 3D Materials Synthesis (SVBRDFs) with focus on the game- and film-industry.

M.Sc. Thesis - Deep Multimodal Learning for Autonomous Driving

ROBERT BOSCH GMBH

Renningen, Germany

May 2019 - Nov. 2019

- Topic: Sensor-fusion algorithms (Radar, RGB) for Autonomous Driving.

Languages

Spanish Native **English** Fluent **German** Fluent **French** Intermediate

Skills

Programming	Python, C#, C++, \LaTeX	Game/3D	Unity, Unreal Engine, Blender	Robotics	ROS, Gazebo
AI	PyTorch, Tensorflow	OS	Windows, Linux	SW-Dev	CMake, Visual Studio, PyCharm, Git

Academic Activities

Teaching Assistant for INF633 - Advanced 3D Graphics

ÉCOLE POLYTECHNIQUE

Palaiseau, France

Oct. 2020 - Oct. 2023

- Topic: Ecosystems Authoring, Procedural Animations, AI for Behavior Planning.

Research Visitor

CYENS CENTRE OF EXCELLENCE

- Topic: Character Animation with focus on Motion Capture and Motion Matching. Supervisor: Prof. Yiorgos Chrysanthou.

Nicosia, Cyprus

Jul. 2021 - Oct. 2021

Research Visitor

UNIVERSITAT POLITÈCNICA DE CATALUNYA

- Topic: Crowds Authoring in Natural Environments. Supervisor: Prof. Nuria Pelechano.

Barcelona, Spain

Sep. 2022 - Dec. 2022

Reviewer / Committee

SIGGRAPH, SIGGRAPH ASIA, IEEE VR, TVCG, EUROGRAPHICS (PC), CEIG (PC), CASA (PC)

Worldwide

Oct. 2020 - Currently

Selected Publications --- PEER-REVIEWED JOURNAL AND CONFERENCE ARTICLES

SoleSense: Insole-guided Stability for Diffusion-driven Humanoids

SIDHARTH SURESH NAIR, **EDUARDO ALVARADO**, CHRISTIAN THEOBALT

(under review), 2026

SOMA: From Surface Observations to Muscle Anatomy

EDUARDO ALVARADO, EMILY KIM, GERRIT NOLTE, FRIEDEMANN RUNTE, MARIO BOTSCH, MARC HABERMANN, CHRISTIAN THEOBALT

(under review), 2026

Step2Motion: Locomotion Reconstruction from Pressure Sensing Insoles (🔄📄📺)

JOSE LUIS PONTON, **EDUARDO ALVARADO**, LIN GENG FOO, NURIA PELECHANO, CARLOS ANDUJAR, MARC HABERMANN

Eurographics 2026

FRAME: Floor-aligned Representation for Avatar Motion from Egocentric Video (🔄📄📺)

ANDREA BOSCOLO CAMILETTO, JIAN WANG, **EDUARDO ALVARADO**, RISHABH DABRAL, THABO BEELER, MARC HABERMANN, CHRISTIAN THEOBALT

Computer Vision and Pattern Recognition (CVPR), 2025

BimArt: A Unified Approach for the Synthesis of 3D Bimanual Interaction with Articulated Objects (🔄📄📺)

WANYUE ZHANG, RISHABH DABRAL, VLADISLAV GOLYANIK, VASILEIOS CHOUTAS, **EDUARDO ALVARADO**, THABO BEELER, MARC HABERMANN, CHRISTIAN THEOBALT

Computer Vision and Pattern Recognition (CVPR), 2025

TRAIL: Simulating the Impact of Human Locomotion on Natural Landscapes (🔄📄📺)

EDUARDO ALVARADO, OSCAR ARGUDO, DAMIEN ROHMER, MARIE-PAULE CANI, NURIA PELECHANO

Computer Graphics International (CGI), 2024

Generating Upper-Body Motion for Real-Time Characters Making their Way through Dynamic Environments (🔄📄📺)

EDUARDO ALVARADO, DAMIEN ROHMER, MARIE-PAULE CANI

Proceedings of the ACM SIGGRAPH/Eurographics Symposium on Computer Animation (SCA), 2022 - **Best Paper Honorable Mention Award**

Real-Time Locomotion on Soft Grounds With Dynamic Footprints (🔄📄📺)

EDUARDO ALVARADO, CHLOÉ PALIARD, DAMIEN ROHMER, MARIE-PAULE CANI

Frontiers in Virtual Reality, Frontiers, 2022, 3, (10.3389/frvir.2022.801856)

A Survey on Reinforcement Learning Methods in Character Animation (📄)

ARIEL KWIATKOWSKI, **EDUARDO ALVARADO**, VICKY KALOGEITON, KAREN C. LIU, JULIEN PETTRÉ, MICHIEL VAN DE PANNE, MARIE-PAULE CANI

Eurographics 2022, Computer Graphics Forum, Wiley, 2022, pp.1-27. (10.1111/cgf.14504)

Soft Walks: Real-Time, Two-Ways Interaction between a Character and Loose Grounds (🔄📄📺)

CHLOÉ PALIARD, **EDUARDO ALVARADO**, DAMIEN ROHMER, MARIE-PAULE CANI

Eurographics 2021 (short), May 2021, Vienna, Austria.

Dissemination Activities ---

PhD Research. "Present and Future of Character Animation"

MAX PLANCK INSTITUTE FOR INFORMATICS

Saarbrücken, Germany

Oct. 2022

Summer School Youth Program. "Can AI be Creative? Using AI for Animation"

HEC BUSINESS SCHOOL

Palaiseau, France

Jul. 2022

Doctoral Consortium

EUROGRAPHICS 2021

Online

May 2021

Interests ---

I'm passionate about skiing and try to explore a new destination each year with friends and family. I stay actively engaged with the latest developments in robotics and AI, often sharing my curiosity with my son to spark his interest. In my spare time, I enjoy hands-on DIY projects, learn piano and game-dev. One day, I would love to found my own game studio.