

Eduardo Alvarado

PH.D. CANDIDATE IN CHARACTER ANIMATION AND COMPUTER GRAPHICS

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Education

Ph.D. in Character Animation and Computer Graphics

Palaiseau, France

ÉCOLE POLYTECHNIQUE, LIX

Oct. 2020 - Oct. 2023

- Topic: Groups of Humans and Animals in Natural Environments: A Multi-Scale Approach.
- 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 Engineering

Freiburg, Germany

ALBERT-LUDWIGS-UNIVERSITÄT FREIBURG

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

Madrid, Spain

UNIVERSIDAD CARLOS III

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**.
- Activities: ERASMUS Scholarship (6 months) at Poznan University of Technology, Poland. Focus on Image/Video Processing.

Academic & Industry Experience

Ph.D. Intern

Bordeaux, France

UBISOFT LA FORGE

Jun. 2023 - Jul. 2023

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

Research Scientist - Computer Graphics and AI

Stuttgart, Germany

INSTALOD GMBH

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

Renningen, Germany

ROBERT BOSCH GMBH

May 2019 - Nov. 2019

- Research on novel Object Tracking and Detection methods using DL-based representations in the field of sensor-fusion for Autonomous Driving.

Research Assistant - Autonomous Intelligent Systems

Freiburg, Germany

ALBERT-LUDWIGS-UNIVERSITÄT FREIBURG

Sep. 2017 - Feb. 2019

- Integration of Autonomous Driving simulations (Unreal Engine 4) with AirSim and ROS for the virtual acquisition of camera- and LiDAR-data.
- TurtleBot3 Waffle HW/SW set-up for teleoperation, SLAM and indoor mapping.

M.Sc. Intern - Dev-tools Engineer for Autonomous Driving

Friedrichshafen, Germany

ZF FRIEDRICHSHAFEN AG

Apr. 2018 - Oct. 2018

- ROS tools-development and integration of closed-loop systems in simulated and real environments on-board, for manipulation and visualization of vehicle-data.

Business Strategy Analyst - Robotics and 3D Printers

Madrid, Spain

BQ MUNDO READER S.L.

Nov. 2014 - May 2016

- Responsible for Strategy Planning. In-depth knowledge of Additive Manufacturing and project management in the Industry 4.0 sector.
- Channel Distribution Manager. Lecturer for robotics workshops and trainings for international groups, clients and educational institutions.
- QA Engineer. Involvement in the development and quality-monitoring of robotic and 3D printing projects (Arduino, Raspberry Pi, C++/Python).

Teaching Experience

TA for INF633 - Advanced 3D Graphics

Palaiseau, France

ÉCOLE POLYTECHNIQUE

Oct. 2020 - Oct. 2022

- Lab coordinator under the supervision of Prof. Marie-Paule Cani.
- Technical Art in Unity: Ecosystems Authoring, Procedural Animations, AI for Behavior Planning.

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

Research Visitor

CYENS CENTRE OF EXCELLENCE

Nicosia, Cyprus

Jul. 2021 - Oct. 2021

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

Research Visitor

UNIVERSITAT POLITÈCNICA DE CATALUNYA

Barcelona, Spain

Sep. 2022 - Dec. 2022

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

Publications

PEER-REVIEWED JOURNAL AND CONFERENCE ARTICLES

How Much Do We Pay Attention? A Comparative Study of User Gaze and Synthetic Vision during Navigation

JULIA MELGARE, GUIDO MAINARDI, **EDUARDO ALVARADO**, DAMIEN ROHMER, MARIE-PAULE CANI, SORAIA MUSSE

ACM/SIGGRAPH Conference on Motion, Interaction and Games (MIG), Poster, 2023

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 and Volunteer Activities

Student Volunteer

SIGGRAPH 2023

Los Angeles, USA

Aug. 2023

PhD Research in Character Animation

UBISOFT LA FORGE

Bordeaux, France

Jul. 2023

PhD Research in Character Animation

RESEARCH CENTER FOR VISUALIZATION, VIRTUAL REALITY AND GRAPHICS INTERACTION (VIRVIG) - UPC

Barcelona, Spain

Oct. 2022

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

GeoViC Research Group for M.Sc. students

ÉCOLE POLYTECHNIQUE

Palaiseau, France

May 2022

Workshop on Virtual Humans and Crowds in Immersive Environments (VHCIE)

IEEE VR 2022

Online

Mar. 2022

PhD Research in Character Animation

INRIA

Rennes, France

Mar. 2022

PhD Research in Motion Matching and Motion Capture

CYENS CENTRE OF EXCELLENCE

Nicosia, Cyprus

Sep. 2021

GeoViC Research Group for M.Sc. students

IDIA DAY (COMPUTER SCIENCE, DATA & AI) AT IP PARIS

Palaiseau, France

Jun. 2021

Doctoral Consortium

EUROGRAPHICS 2021

Online

May 2021

Interests

I love skiing. Every year I try to visit a different place to practice it with friends and family. I also like to keep myself regularly informed about new developments in robotics and AI, trying to get my nieces interested in them as well. In my spare time, I work on my photography portfolio and my personal blog about game-dev. Someday I would love to create my own studio. When I get the chance, I enjoy working on electronics projects, as well as reading about fields that are new for me.