Eduardo **Alvarado**

PH.D. CANDIDATE IN 3D ANIMATION AND COMPUTER GRAPHICS

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Education

Ph.D. in 3D 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 (CLIPE 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
Mar. 2023 - Jun. 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. 2021

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

Languages

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

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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   *Nicosia, Cyprus*

CYENS CENTRE OF EXCELLENCE   *Jul. 2021 - Oct. 2021*

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

Research Visitor   *Barcelona, Spain*

UNIVERSITAT POLITÈCNICA DE CATALUNYA   *Sep. 2022 - Dec. 2022*

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

Publications   PEER-REVIEWED JOURNAL AND CONFERENCE ARTICLES

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. (hal-03200160v3)

Dissemination Activities

PhD Research in Character Animation   *Barcelona, Spain*

RESEARCH CENTER FOR VISUALIZATION, VIRTUAL REALITY AND GRAPHICS INTERACTION (ViRVIG) - UPC   *Oct. 2022*

PhD Research. "Present and Future of Character Animation"   *Saarbrücken, Germany*

MAX PLANCK INSTITUTE FOR INFORMATICS   *Oct. 2022*

Summer School Youth Program. "Can AI be Creative? Using AI for Animation"   *Palaiseau, France*

HEC BUSINESS SCHOOL   *Jul. 2022*

GeoViC Research Group for M.Sc. students   *Palaiseau, France*

ÉCOLE POLYTECHNIQUE   *May 2022*

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

IEEE VR 2022   *Mar. 2022*

PhD Research in Character Animation   *Rennes, France*

INRIA   *Mar. 2022*

PhD Research in Motion Matching and Motion Capture   *Nicosia, Cyprus*

CYENS CENTRE OF EXCELLENCE   *Sep. 2021*

GeoViC Research Group for M.Sc. students   *Palaiseau, France*

IDIA DAY (COMPUTER SCIENCE, DATA & AI) AT IP PARIS   *Jun. 2021*

Doctoral Consortium   *Online*

EUROGRAPHICS 2021   *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.