

CARLOS SALVADOR CARBONE LORIO

PhD in Engineering in Computer Science
Master of Science in Mechanical Engineering
Bachelor in Electromechanical Engineering

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Munich, Germany

Nationality: Panama, Italy.

Born in Panama, 21 September 1990

Languages: Spanish, English, Italian, German

EXPERIENCE

Dec 2022 – Present

Huawei Munich Research Center

Munich, Germany

Senior Robotics Simulation Researcher for Cloud Robotics

- Implementation of video game engines as robotics simulation environments
- Implementation of Domain Randomization along with latest trends of generative AI trends for text-to-3D generation
- Agentic AI system implementation with NLPs or LLMs such as ChatGPT and LLAMA
- Research with Multimodal Large Language Models
- Implementation of simulation environments considering features required for embodied AI tasks
- Hiring and management of master student as intern
- Hiring and management of PhD student for industrial PhD
- Project task management using tools like Jira

Feb 2022 – Oct 2022

Sapienza University of Rome

Rome, Italy

Researcher Engineer under the project AGR-O-RAMA

- Robotics research within the context of Precision Agriculture
- Aerial Swarm Robotics simulators development and maintenance within github, readthedocs and wix
- Heavy use of Linux and ROS with C++, Python
- Heavy use of Unity with C#
- Publication of research experiments in conferences and journals

Aug 23, 2017 – Dec 7, 2017

GIC group

Alexandria, Virginia.
United States

Research and development intern

- Due diligence for several agricultural companies
- Research for technologies and market tendencies of interest
- Customer report data analysis
- Social media and newsletter

Jan 2015, Nov 2016,
Jun 2017

Spider

Uruguay, Costa Rica,
Nicaragua

Engineer Translator

- Spanish-English translation for the use of wind turbine platforms
- Technical assistance during installation and training of platforms

May 28, 2015 – Jan 4, 2016

Avalon Games LLC

Online, for USA from
Panama

3D Artist

- Handling of multiple design software for 3D design
- Quick learning of multiple software to support pipeline workflow
- Few freelancer graphic design projects
- Video game programming for personal project

Sep 2013, Jan 2015

Servicios de plomería Victor

Panama

Plumbing drawing design

- Intense use of AutoCAD
- Plumbing design for civil structures like commercial establishments, buildings, etc.
- Interaction with customer architects

Jul 2011 – Dec 2016

Freelancer

Panama

Music professor

Jan 2012	- Efficient teaching to people in the range of 5 – 22 years old - Guitar, bass guitar, drums and keyboards classes	Panama
	VFX	
	<i>Audio editor</i> - Audio edition in software for tv and radio commercials. - Work under intense environment of advertisement industry	

EDUCATION

2022	Sapienza University of Rome <i>PhD in Engineering in Computer Science (funded with scholarship)</i>	Rome, Italy
2018	Technological University of Panama <i>Master of Science of Mechanical Engineering (funded with scholarship)</i> <i>Bachelor of Electromechanical Engineering</i>	Panama, Panama
2015	<i>Post graduate course of Video Game Development using Unity 500 hours</i>	
2015	<i>Post graduate course of Mobile Apps 400 hours</i>	
2017	The Washington Center <i>Panama Innovation and Competitiveness Internship Program (funded with scholarship)</i>	Washington, DC. United States

SCIENTIFIC PUBLICATIONS

2025	ConsistentDreamer: View-Consistent Meshes Through Balanced Multi-View Gaussian Optimization	Pattern Recognition Letters, Volume 190, April 2025, Pages 118-125
2022	<i>Photorealistic simulations of crop fields for remote sensing with UAV swarms</i>	Drones - Systems of Information on cultural hEritage (D-SITE) 2022
2021	<i>Monitoring and mapping of crop fields with UAV swarms based on information gain</i>	The 15th international symposium on distributed autonomous robotic systems 2021
2020	<i>Augmentation of sunflower-weed segmentation classification with Unity generated imagery including near infrared sensor data request by conference</i>	Springer Book of SIMULTECH 2020
2020	<i>Simulation of near infrared sensor in Unity for plant-weed segmentation classification Included in short list for best paper in conference</i>	International conference on Simulation and Modeling. Methodologies, Technologies and Applications (SIMULTECH) -2020
2019	<i>Robotics for Precision Agriculture @DIAG</i>	I-Rim conference 2019
2017	<i>Swarm robotics as a solution to crops inspection for precision agriculture</i>	Panama, Engineering, Science and Technology Conference (ESTEC) - 2017

MAJOR ACADEMIC PROJECTS

NOVEMBER (2018) – January (2022), PhD THESIS: AERIAL SWARM ROBOTICS FOR PRECISION AGRICULTURE. Simulations of multiple plants and weeds to generate imagery for training of deep convolutional neural network and simulations of weed surveys using aerial swarm robotics. Simulators include Unity 3D, Flightmare with ROS, and custom C++ simulator. Experiments with real UAVs are expected to take place during the last months of the PhD during a 6 months period abroad in the Czech Technical University in Prague in Czech Republic.

APRIL (2016) - APRIL (2018), MASTER'S THESIS: CONTROL SYSTEM FOR COOPERATIVE INSPECTIONS. Simulations of multiple quadrotors in ROS, programs were written in C++. Swarm robotics was the concept to be studied and used to simulate flights during inspections of crops.

ROBOTICS/PROGRAMMING SOFTWARE

ROS 1-2 (4 years)	Unity 3D (3 years)	Matlab (1 year)	Dockers (4 years)
Github (4 years)	Unreal Engine 4-5 (3 years)	NeoVim (4 year)	O3DE (2 years)

PROGRAMMING LANGUAGES

C++ (5 years)
Python (5 years)

C# (3 years)
Latex (3 years)

Matlab (1 year)
Bash (2 years)

Java Script (1 year)

DESIGN SOFTWARE (~2 years each)

Gimp
Inkscape
Z-Brush
3DS Max
Autocad

Substance Painter
Mari
Photoshop
Vegas
DaVinci Resolve

Marvelous Designer
Topogun
Headus UV layout
Motion Builder
Illustrator

Logic Pro
ProTools
Ableton
Maya
Blender (3 years)

FUNDING AND AWARDS

2021 - Sapienza University of Rome – Italy

Research funding for the call out “Bando di mobilita” for period abroad in the Czech Technical University in Prague in Czech Republic to develop experiments with swarms of UAVs to detect objects of interest.

2020 - Sapienza University of Rome – Italy

Research funding for the call out “Bando di avvio alla ricerca”

2019 – Technological University of Panama - Panama

2nd place for award to best publishing article from graduation thesis for the Master of Science in Mechanical Engineering

2018 - SENACYT – Panama

Entrepreneurship funding for the call out “Convocatoria pública para el fomento a nuevos emprendimientos 2018” to develop educational video game for mobile devices about global warming

2017 - SENACYT – Panama

Research funding for the call out “Nuevos investigadores 2017” to get computational equipment for simulation of swarm of drones for precision agriculture.

MAJOR VIDEO GAME PROJECTS

Cool Earth (Android – 10 members) - Management and programming – Video Game Funded by SENACYT – Panama

Educational video game about global warming with multiple minigames of solutions about global warming.

Cool Pipo (PC and Android – 4 developers) - Management and programming – Simplified version of Cool Earth

Educational video game about global warming from the perspective of the Antarctic using penguin sliding dynamics as a race/adventure game experience.

Shadow Strike (PC – 4 developers) - Management and programming – Proposal video game

Hack and slash game with fast paced combat including sword combos, gun ranged combat and spell combat.

Thin Ice (PC / 5 developers) - Management and programming – Submitted for contest UE4 winter jam

Fast paced gun combat with kick physics that push enemies backward with high speed movement leaving debris.

Tunnel Run (PC / 6 developers) - Management and programming – First exposed game

Obstacle avoidance game with hover car inside a tunnel including customization and boss fights with shooting dynamics.

ADDITIONAL SELF-DEVELOPMENT ACTIVITIES

Digital Marketing - Several courses with Udemy and additional conferences

Watching courses in Udemy, attending to digital and physical conferences, and reading technical documentation to handle marketing in digital platforms like social media, chatbots, data tracking, automated posting, paid advertisement and remarketing with the following platforms:

Non-Paid advertisement:

Facebook	YouTube	Reddit	Google Firebase
Instagram	Discord	Wix	Google Analytics
Later	IFFFS		Game Analytics

Paid advertisement:

Google search	Facebook chatbots	General paid per search advertising techniques
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Language Learning – Self thought by research in the internet and exposure with entertainment and news digital media