

TOBIA GIANI



HEAD OF VIRTUAL ENVIRONMENTS @ AIKO

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PROFILE

Senior software engineer with 10+ years across the gaming and aerospace industries. Mathematician by training, specialized in real-time simulation, numerical methods and 3D graphics; today leading the Virtual Environments department at AIKO, building simulation products for autonomous space missions — from CubeSat rendezvous to lunar landing.

EXPERIENCE

07/2021 – present

Head of Virtual Environments

AIKO – INFINITE WAYS TO AUTONOMY – TURIN

- Lead real-time simulation development for aerospace autonomy (Unity3D, C#, C++, Python, VR).
- Built simulators for synthetic dataset generation, powering AI-based visual navigation and pose estimation where real orbital data is scarce.
- Created closed-loop reinforcement-learning environments for GNC agents — including "Buzz", an RL-controlled In-Orbit Servicing simulator for CubeSat rendezvous and docking, with a human-vs-RL interactive demo — playable at buzz.aikospace.com.
- Delivered VR/AR demos and real-time tools (AI lunar-landing agent demo, EO payload data generator, Flight Dynamics Engine).
- Manage a cross-functional technical team; coordinate delivery and knowledge sharing across departments.

01/2020 – 07/2021

Autonomous Driving Engineering Specialist

STELLANTIS – ORBASSANO (TURIN)

- Simulation team on the L3 autonomous-driving "Thunder" project in collaboration with BMW.
- Integrated vehicle dynamics and sensor models into the software-in-the-loop platform.
- Built continuous-integration pipelines and managed large-scale simulation runs on clusters to test AD functions.

12/2015 – 01/2020

Lead Game Programmer / Software Engineer

MIXEDBAG SRL – TURIN

- Shipped and ported titles on PlayStation 4, PS Vita, Xbox, Nintendo Switch / Wii U, mobile and Apple Arcade.
- Developed physics simulation systems, AI entities and low-level platform integration code.
- Led a small team of programmers; project management on B2B projects including AR/VR applications.
- Secret Oops! (Apple Arcade) awarded by IIDEA as best innovative game.

03/2015 – 11/2015

MSc Thesis Internship

MIXEDBAG SRL – TURIN

- Master's thesis on target-driven fluid animation, developed and tested on PlayStation 4.

10/2012 – 01/2013

Android Developer

MUTABILIS SRL – ROME

- Ported interactive tales to Android (Digital Tales' "Snow White", "Little Red Riding Hood").
- Built a traffic-prediction visualization tool with the University of Rome "Tor Vergata".

10/2012 – 02/2013

Teaching Assistant

UNIVERSITY OF ROME "TOR VERGATA"

- Assistant for the "Programming in Java and graphics" course (BSc Science and Technology for the Media).

EDUCATION

2013 – 2015

MSc Computer Science — Virtual Reality & Multimedia

UNIVERSITY OF TURIN – 110/110 CUM LAUDE

2008 – 2012

BSc Science and Technology for the Media — Applied Mathematics

UNIVERSITY OF ROME "TOR VERGATA" – 108/110

SKILLS

ENGINES & GRAPHICS

Unity3D

Unreal Engine 4

real-time rendering

VR/AR

LANGUAGES

C#

C++

Python

JavaScript

Java

PHP

SQL

SIMULATION & SPACE AI

numerical methods

orbital & attitude dynamics

RL training environments

synthetic data pipelines

SIL testing

DEVOPS

Git

Docker

Jenkins

CI/CD

Linux

LEADERSHIP

people management

Agile/Scrum/Kanban

activity planning

cross-team communication

PUBLICATIONS

2025 Differentiating Adversarial Attacks from Natural Sensory Anomalies in Object Detection

R. Lowe, M. Ulan, T. Bui, G. Giordana, T. Giani, F. Rossi
ECML PKDD 2025 – SAFEXPLAIN Horizon Europe project

2024 Optimizing Multi-Task Learning for Accurate Spacecraft Pose Estimation

F. Evangelisti, F. Rossi, T. Giani, I. Bloise, M. Varile
SPAICE Conference

2023 A mission-agnostic on-board autonomy software solution to streamline spacecraft operations

SpaceOps

SELECTED SHIPPED TITLES

Secret Oops! (Apple Arcade, 2020) · Detective Gallo (2018) · Still Time (2018) · Avery — IBM Italia (2018) · forma.8 (2017) · Blue Angels (2017) · Wheels of Aurelia (2016) · Futuridium EP Deluxe (2016) · The Wardrobe · Atomine · Waking Violet · and more console ports

TALKS & CERTIFICATIONS

Regular speaker on game technology for space and AI – OGR Torino, Politecnico di Torino, ASI workshops, GSSI SPACERAISE doctoral school.

Certifications – Unity Certified Developer, Unity Technologies (2017)

Languages – Italian (native) / English (professional working proficiency, B2)