

Gianmarco Picarella

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SKILLS

Specialty: Computational geometry (CGAL), Gameplay and AI programming, Code performance optimization

Programming: C, C++, Python, C#, SQL, Bash, Web development (Typescript, NextJS, TailwindCSS)

Performance and optimization: SIMD, Multi-threading and processing (Intel TBB), GPGPU (CUDA, OpenCL), Intel VTune

Software: Unreal Engine 5, Unity 3D, Visual studio, CMake, Git, Perforce, Jira

Artificial Intelligence: CNNs and ViT architectures in Pytorch and Keras, Behaviour trees, Monte Carlo Tree Search (MCTS)

EXPERIENCE

Junior Software Engineer, UBISOFT – Milan, Italy 06/2021 – 07/2022

- Worked on the AAA videogame [“Mario+Rabbids: Sparks of Hope”](#) published on Nintendo Switch
- Developed and polished real-time AI game features from early-alpha to gold
- Developed geometric algorithms for the collision-free movement of multiple agents in real-time
- Profiled and optimized critical algorithms and game systems backing the AI system of the game

Software Engineer Intern, MILESTONE – Milan, Italy 01/2021 – 04/2021

- Developed various game prototypes with Unreal Engine 4

Generalist Software Engineer, WALE STUDIO – Rome, Italy 01/2019 – 06/2020

- Developed the business website and several in-house solutions for data processing and storage

EDUCATION

Utrecht University – MSc in [Game and Media Technology](#) – GPA: 8.53/10 Cum Laude 02/2023 – 06/2025

Utrecht University Business School – Honours Programme [“UUBC”](#) – Top 30 students 01/2025 – 05/2025

University of Rome “La Sapienza” – BSc in [Computer Science](#) – GPA: 110/110 Cum Laude 09/2017 – 12/2020

IT High School “Luigi Trafelli” – High School Diploma in Computer Science – GPA: 98 out of 100 09/2012 – 07/2017

Italian Videogame Academy – Course in [Videogame programming](#) – Pass 09/2016 – 04/2017

PUBLICATIONS

Gianmarco Picarella, Marc van Kreveld, Frank Staals, Sjoerd de Vries.

Computing Largest Subsets of Points Whose Convex Hulls have Bounded Area and Diameter [Link to Publication](#)

- Published in 33rd Annual European Symposium on Algorithms (ESA 2025) on October 1st 2025

PROJECTS

Finding dense and well-shaped convex clusters in 2-dimensional point sets [Github Repository \(thesis included\)](#)

- Master's Thesis in Computational Geometry at Utrecht University. A paper condensing these results has been accepted for inclusion in the ESA 2025 conference

AAA Videogame “Mario+Rabbids: Sparks of Hope” [IMDB Credits](#)

- Nintendo Switch videogame developed by Ubisoft and published in October 2022 by Nintendo

35K agents simulated in real-time using Unreal Engine 5 [Github Repository](#)

- Crowd simulation techniques in C++ for efficient planning, avoidance, rendering and nearest neighbours lookup

Code optimization and vectorization techniques for C++ applications [Github Repository](#)

- Vectorization, GPU parallelization, cache optimization and more in C++ code

3D lower envelope algorithms: C++ implementation, parallelization and benchmarking [Github Repository](#)

- Efficient CGAL-based C++ algorithms for 3D lower envelope computations

Semi-Lagrangian 2D stable solver for fluid simulation in C++ [Github Repository](#)

- Real-time C++ simulation of fluid behaviours using a fixed-size 2D grid and Semi-Lagrangian techniques