

Michelangelo Diamanti

SOFTWARE ENGINEER · GAMES, REAL-TIME & AI SYSTEMS

Reykjavík, Iceland

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Professional Profile

Software engineer and independent contractor building commercial games, real-time simulations, and data-intensive AI systems. Experience spans Unreal Engine and Unity gameplay, performance optimization, distributed backends, compilers, and LLM applications. PhD in Computer Science with six peer-reviewed publications and a track record of turning research prototypes into usable software.

Professional Experience

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Reykjavík, Iceland

FOUNDER & SOFTWARE ENGINEER

Jul. 2025 - Present

- Founded an independent software consultancy delivering **applied AI, distributed backends**, data platforms, and real-time systems end to end for private clients.
- Designed and built core parts of **AI Decision Automation**: plain-English access to **4+ TB** of live data, typed visual automations compiled to server-side code, and an indexed runtime processing **15M+ events per day**.

Parity Games

Reykjavík, Iceland

SOFTWARE ENGINEER

Jun. 2024 - Jun. 2025

- Contributed **gameplay mechanics, AI systems**, and open-world performance work to **Island of Winds**, a commercial story-driven adventure built in **Unreal Engine**.
- Profiled and refined **World Partition** and **Nanite** content, fixed cross-system defects, and built **internal tools** for the development team.

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Reykjavík, Iceland

SOFTWARE ENGINEER

Feb. 2024 - May 2024

- Developed browser-based **Unity** digital twins of Blönduós and Árnes for participatory urban planning, including **dynamic resource streaming** for large, editable environments.
- Conducted **WebGPU R&D** to move beyond **WebGL** browser limitations and migrated deployment infrastructure from **AWS to DigitalOcean**.

Reykjavík University – CADIA

Reykjavík, Iceland

POSTDOCTORAL RESEARCHER

Jun. 2023 - Nov. 2024

- VR Courtroom**: built a configurable scenario director, facilitator controls, and responsive **VR interaction systems** for the technology later used in a published clinical case study.
- VR Air Traffic Control**: developed **hand-tracked interaction**, configurable scenarios, logging, and remote data capture for a planned study of mission-critical performance.

TEACHING ASSISTANT

Jan. 2019 - Nov. 2022

- Designed and delivered practical labs in **game development, real-time graphics**, networked virtual environments, and **AI-driven characters**; mentored and assessed student projects.

Technical Skills

Languages	C++, C#, Ruby, TypeScript/JavaScript, Python, SQL
Games, Simulation & VR	Unreal Engine, Unity, gameplay programming, game AI, virtual reality, VR interaction systems, hand tracking, crowd simulation, WebGL, WebGPU, GPU compute, shaders, performance optimization
Systems, Data & Web	Distributed systems, event-driven architecture, data engineering, PostgreSQL, high-throughput data pipelines, Ruby on Rails, Node.js, React, cloud infrastructure
AI & Automation	Generative AI, LLM applications, AI-assisted data analysis, visual programming, compilers, code generation, human-in-the-loop automation, machine learning

Selected Technical Work

AI Decision Automation

LLMS, RUBY ON RAILS, POSTGRESQL, COMPILERS

- Built a production platform where users query complex live data in **plain English** and turn useful findings into **typed visual automations** compiled to server-side code.
- Designed guarded query execution, a catalog of about 200 vetted operations, and indexed event dispatch over **4+ TB** of live data and **15M+ daily events**. [case study]

Island of Winds

UNREAL ENGINE, C++, GAMEPLAY, AI

- Developed **gameplay mechanics** and **AI systems**, and polished player-facing systems through cross-system fixes and iterative refinement.
- Drove **open-world performance optimization** using World Partition and Nanite, and built internal development tools. [case study]

Agora – Crowd Simulation Framework

UNITY, C#, GPU COMPUTE

- Designed a stimulus-centric heatmap paradigm, modular simulation architecture, and **visual node language** for authoring and combining crowd behaviors.
- Moved dynamic heatmap generation to **GPU compute**, driving up to **3,000 agents at 30–120 FPS**; validated the model against tourist-movement data from Pingvellir. [case study]

VR Courtroom

UNITY, C#, VR, HAND TRACKING

- Built a JSON-driven **scenario director**, facilitator controls, and responsive **VR interaction systems** for configurable courtroom sessions.
- The resulting technology was used in a **published clinical case study** helping survivors prepare for court proceedings. [case study]

Ascension – Puzzle Game

UNREAL ENGINE, C++, BLUEPRINTS

- Implemented **ship steering**, pickups, and puzzle systems in Unreal Engine with a game-jam team.
- Won **first place** at the 2024 Game Makers Iceland Community Game Jam. [demo]

Education

Reykjavík University

DOCTOR OF PHILOSOPHY (PH.D.) IN COMPUTER SCIENCE

- Dissertation: **Agora: A Framework for Unifying Crowd Simulation Behavioral Models**.

Reykjavík, Iceland

Jan. 2019 - Jun. 2023

Reykjavík University & University of Camerino (UNICAM)

MASTER OF SCIENCE (M.SC.) IN COMPUTER SCIENCE – DOUBLE DEGREE

- Final grades: **9/10** at Reykjavík University and **110/110 cum laude** at the University of Camerino.

Reykjavík / Camerino

Nov. 2016 - Feb. 2019

University of Camerino (UNICAM)

BACHELOR OF SCIENCE (B.SC.) IN COMPUTER SCIENCE

- Final grade: **108/110**.

Camerino, Italy

Sep. 2013 - Oct. 2016

Research & Recognition

2017–22	Publications , Six peer-reviewed papers in crowd simulation, virtual agents, AI, and intelligent environments.	Google Scholar
2022	Lead Author , Extending the Menge Crowd Simulation Framework: Visual Authoring in Unity.	ACM IVA
2019	Lead Author , Automatic Abstraction and Refinement for Simulations with Adaptive Level of Detail.	AAAI AIIDE
2021	Principal Investigator , Icelandic Research Fund doctoral grant for Agora: 13M ISK over two years, 18% acceptance rate.	Reykjavík, Iceland