Joey van Haren

Games Programming student at BUas · Gameplay & AI Systems

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PROFILE

Third-year Games Programming student at Breda University of Applied Sciences, specializing in gameplay and AI systems. I started in game development through an MBO, and did an internship at ChimpWorks Games before enrolling at BUas. Since my second year I have focused on AI programming: building systems that feel responsive and intelligent, from stealth guards and cat AI to Monte Carlo decision making. My goal is to continue growing in that direction and eventually work in the AAA industry.

EXPERIENCE

Internship – Game Developer · ChimpWorks Games 2021

First professional game development experience. Contributed to live projects and gained grounding in studio workflow and tooling.

EDUCATION

BSc Game Technologies (expected 2026) · Breda University of Applied Sciences 2023 – Present

MBO 4 Game Developer · Technova College 2018 – 2021

PROJECTS

Chasing Whiskers · Unreal Engine 5, C++ 2026 – Present

Comedy action game in development for Steam. Responsible for the full cat AI system.

- implemented a six-state FSM covering roaming, caution, fleeing, hiding, following, and patrolling
- Integrated Unreal nav links with custom ballistic arc jump physics by reading engine source directly
- Implemented BOIDS-based steering with a settle system for group following behaviour
- Built a hiding spot selection system with probability falloff by distance and movement direction
- Created a patrol path editor tool using Unreal's FComponentVisualizer with in-viewport waypoint dragging

Nakon + FPS Engine · Custom C++ Engine (Firewasp) 2025

First-person horde shooter inspired by Call of Duty Zombies, built on a custom engine over 8 weeks.

- Built the interactables system: wall buys, perk machines, and enemy power-up drops
- Implemented three enemy variants with per-wave health scaling and head hitbox detection
- Extended crowd navigation with surface clamping to prevent agents drifting off navmesh edges
- Integrated Recast/Detour into a custom engine with no documentation, working largely from source
- Built a reusable agent behaviour API with vision frustum, detection meter, pathfinding, and combat

Mahjong AI · Unreal Engine 5, C++ 2026

- Built a lookup-table shanten calculator covering standard hands, seven pairs, and thirteen orphans
- Implemented flat Monte Carlo with determinization for decision making under hidden information
- Parallelised simulation across all CPU cores using Unreal's ParallelFor with deterministic per-task seeds

Godot Behaviour Tree Plugin · Godot 4, GDExtension, C++ 2025

- Built a visual graph editor, runtime execution system, and full set of standard node types as a GDExtension
- Supported both C++ and GDScript for condition and action nodes
- Resolved an undocumented Godot 4.3 serialization bug affecting custom GDExtension resource arrays

SKILLS

C++ · C# · Unreal Engine 5 · Unity · Godot · Gameplay AI · Finite State Machines · Behaviour Trees · Monte Carlo · Pathfinding · Recast / Detour · Steering Behaviours · BOIDS · Perforce · Git