Vihaan Bhatt Senior Engine Programmer

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PROFILE SUMMARY

- **Senior Engine Programmer** with **8 years** on **in-house engines** for **multiplayer and action games**, focused on **multithreading, memory and streaming** for PS5, Xbox Series X|S and PC.
- Works in **C++20** and **Python** on **CryEngine** and **Fledge**, profiles with **PIX**, **Razor** and **Superluminal**, and builds with **Incredibuild** and **Jenkins**.
- Deep experience in **fiber job systems**, **frame allocators and memory budgets**, and **texture and geometry streaming**, using **capture-based performance reviews** to hold 60 fps in 12-player matches.
- Partners with **Rendering**, **Network**, **Gameplay** and **QA** teams, from the weekly performance review to the certification checklist before each console update.
- Mentors **3 engine programmers**, reviews every change to the job system, and wrote the studio's **guide to console memory budgets**.

TECHNICAL SKILLS

Programming Languages:	C++20, C++17, Python, Lua
Game Engines:	CryEngine, Fledge (in-house), Unreal Engine 5 (side projects)
Low-Level Systems:	Fiber job systems, lock-free queues, frame and pool allocators, data-oriented design, SIMD (SSE, AVX2)
Profilers & Debuggers:	PIX, Razor, Superluminal, Visual Studio, WinDbg, AddressSanitizer
Platforms & SDKs:	PS5, Xbox Series X|S, Windows, PS4, Xbox One, TRC and XR requirements
Build & Version Control:	Perforce, Incredibuild, Jenkins, CMake, Git
Editor & Pipeline Tools:	CryEngine Sandbox, Dear ImGui, Python asset scripts, FlatBuffers

EDUCATION

Technische Universität Darmstadt — **M.Sc. in Computer Science** — Darmstadt, Germany · Oct 2016 to Aug 2018

WORK EXPERIENCE

Crytek — **Senior Engine Programmer** — Frankfurt am Main, Germany · Mar 2022 to Present

- Moved physics and AI updates in **CryEngine** onto fiber-based jobs with explicit dependencies, and raised average core use on **PS5** from 58% to **83%** in 12-player matches.
- Built tagged frame allocators and per-system budgets during the 2024 engine upgrade, cutting peak memory on **Xbox Series S** by **410 MB** on the Mammon's Gulch map.
- Rewrote texture and geometry streaming priorities around player distance and line of sight, and brought the match load on **PS5** from 41 s to **23 s**.
- Led a 6-week frame-time push before the Hunt: Showdown 1896 launch on console, using **PIX** and **Razor** captures, taking the main thread from 21 ms to **15.6 ms**.
- Moved engine builds to **Incredibuild** with a shared cache and added overnight soak tests in **Jenkins**, cutting a full rebuild from 38 to **14 minutes**.

Deck13 Interactive — **Engine Programmer** — Frankfurt am Main, Germany · Sep 2018 to Feb 2022

- Rebuilt entity update order in the in-house **Fledge** engine around explicit tick groups, removing a class of frame-order bugs behind **30+** crashes in The Surge 2 QA builds.
- Ported the file I/O and save layer to **PS4** and **Xbox One** for The Surge 2, fixing **45** TRC and XR issues before the September 2019 launch.
- Wrote a **Dear ImGui** debug menu that lets level designers toggle AI, spawn enemies and drop performance markers, used daily by **25** designers and QA testers.