ADITYA SINHA

TECHNICAL DESIGNER

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SUMMARY

Technical designer with a year at Microsoft's Undead Labs building **enemy AI and combat** in **Unreal Engine 5**, after 3+ years as a software engineer at Oracle. Skilled in **AI design, State Trees, EQS, Blueprints, C++**, and tuning.

SKILLS

- **Game Design:** Technical design, combat design, enemy and boss AI, NPC AI, gameplay systems, prototyping, balancing
- **Unreal Engine 5 (UE5):** Blueprints, State Trees, Behavior Trees, EQS, AI Perception, GAS, motion warping, UMG
- **Languages:** C++, C, Python, C#, Java, SQL
- **Tools:** Perforce, Git, Jira, Confluence, Excel, Unreal Insights, Visual Studio debugger, Unity
- **Methodologies:** Agile, playtest analysis, data driven tuning, technical design docs, gap analysis, code reviews

WORK EXPERIENCE

Microsoft (Undead Labs) — Seattle, WA

Associate Gameplay Designer (Engineer) — Jan 2026 - Oct 2026

- Owned AI for **3 zombie archetypes** from zero to one on Xbox's State of Decay 3, from **perception to combat**.
- Took **the Feral**, a fast, aggressive zombie, from zero to one through **post Alpha tuning**, saving him from being cut.
- Raised players' kill rate on the Feral **30%** using **Alpha data** on time to kill and deaths, by lengthening his cooldowns (lunge attack 6s to 10s, flurry attack 4s to 6s) and recoveries **10%** while raising hard mode damage and health **10%**.
- Built his **vehicle dodges** with **Environment Query System (EQS)** queries and **vector math** on approach angle.
- Cut spikes in **5 EQS queries** across 2 zombies **from 12 ms to 1.5 ms** by trimming points and early filtering.
- Built **stochastic nodes** for weighted attack selection, refactoring **3 zombie state trees** to end lockstep attacks.
- Built **C++ math utilities** and **EQS data contexts** for the **AI state machine framework**, used by **9 AI characters**.
- Built **25+ C++ and UMG cheats** covering **15+ player states**, speeding up QA and design testing **60%**.
- Built **40+ animation montages** across 3 zombie types with damage, motion warp, sound, and collision notifies.
- Tuned **infection** so only 3 zombie types spread it, earning **40% more positive** Alpha feedback on clear sources.
- Wrote an **Alpha gap analysis** for 3 zombies on **6+ major issues**: climbing, stun locks, and unnatural motion warping.
- Wrote the Feral's **technical design docs**, used by design, engineering, audio, and QA from prototype to post Alpha.

Gameplay Design Intern — Sep 2025 - Dec 2025

- Prototyped the Feral before animations existed, using **motion warping** to turn him mid jump without turn in place.
- Built **Gameplay Debugger** views in **C++** that sped up QA and design work **50%** and cut **perception bugs 35%**.
- Balanced **damage falloff** for **6 weapons** (pistols to crossbows), **4 mods** (sights to foregrips), and **aim assist**.

Oracle — Bangalore, India

Software Engineer — Jul 2021 - Jun 2024

- Built **15+ NCQA certified algorithms** in **Clojure** for **HealtheIntent**, Oracle Health's population health platform for **262M+ users**, covering **clinical risk scoring**, **cohorts**, and **event based care rules** across **10M+ patient records**.
- Conducted **30+ root cause analyses**, including a data filter **dropping 20% of a hospital's patients**.

Software Engineer Intern — Jan 2021 - Jun 2021

PROJECTS

Design Tuning Copilot | *Python, LLM API* | GitHub | Portfolio — Oct 2026

- Built a tool that simulates **4,800 fights** and asks an **LLM** for tuning changes, hitting every target in **6 rounds or less**.

Crimson Knight | *Unreal Engine 5, C++* | Portfolio — Dec 2024 - Aug 2025

- Led **5 engineers** over **20+ sprints** on an 18 person Souls-like RPG, reviewing **6+ core features** like GAS abilities.
- Designed **The Absolute**, a multi phase boss who learns the player's habits and counters them.
- Raised boss **Phase 1 success from 10% to 35%** and cut fight time from **140s to under 2 min** across 100 playtesters.
- Built an extensible **State Tree** system and an **n-gram pattern model** so the boss predicts and counters repeated moves.

EDUCATION

M.S. Interactive Entertainment, University of Central Florida, 2025, GPA 3.9
B.S. Computer Science, Manipal Institute of Technology, 2021

AWARDS

- Won **2 Oracle BRAVO awards** for resolving mission critical production issues and delivering under tight deadlines.
- Won **Best Overall Game Recreation** out of 20 for a Robotron 2084 remake written in **C and OpenGL** without an engine.