NICKOLAS SIMONS

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TECHNICAL SKILLS

Programming Languages: C++, C, Haskell, Java, Python, TypeScript, SQL, GraphQL, OpenGL, C#
Frameworks/Tools: Unreal Engine, Visual Studio, Perforce, Git, Jira, Stack (Haskell), Asio (C++), Unity
Specializations: Gameplay Systems, Networking, Performance Optimization, DevOps

WORK EXPERIENCE

stu/dio at Illinois **Champaign, IL**

Programming Lead **August 2024 – Dec 2025**

- Managed a team of 12 engineers across 8 sponsored projects, conducting performance and code reviews.
- Maintained Perforce server and integrated code review and automated build pipelines using Horde and Jenkins.
- Established and enforced code conventions to ensure maintainability across projects.

Programmer *– C++, Unreal Engine 5* **April 2024 – Dec 2025**

- Planned and implemented gameplay features and tooling for VR titles in C++ and Blueprint with a focus on accessibility, performance, and usability in educational environments.
- Resolved critical gameplay bugs impacting gameplay functionality, interaction flow, and level progression.
- Optimized gameplay code and materials to meet performance targets for VR platforms using Unreal Insights.

PROJECT HIGHLIGHTS

Master Dancer VR (stu/dio) | UE5, C++ **May 2024 – Nov 2025**

- Developed two quantized movement-based rhythm games and created data-driven level authoring tools to streamline and simplify designer workflows.
- Implemented a system for anchoring and rendering subtitles in 3D space for VR applications, with support for localization.

VRchaeology (stu/dio) | UE5, C++ **May 2025 – Oct 2025**

- Designed and implemented a modular quest system and editor for guiding user actions using C++, enabling reusable scripting logic and contextual user prompts, improving user experience and guidance.
- Developed an interactive, tool-based excavation system for VR in C++, simulating surface digging and stratigraphic layer analysis.

Card/Equipment Battler | UE5, C++ **Jan 2024 – Jun 2024**

- Implemented lightweight effect-based card and item combat system with card resource restriction features.
- Created tooling to fetch and generate card assets and enemies from design spreadsheets.
- Developed procedural link-based dungeon generation system.

Software Rasterizer | C++ **Sep 2024**

- Implemented triangle scanline rasterization, perspective-correct interpolation, depth buffering (Z-buffer), and viewport transformations.
- Integrated texture mapping with UV wrapping, sRGB to linear color conversion, and indexed triangle rendering using vertex and element buffers.

Othello | Haskell, Python, OpenCV **May 2022**

- Modeled the Othello game with variable board sizes and a computer-controlled opponent using minimax algorithm on a pruned game tree in Haskell.
- Programmed computer vision app to determine game state from picture of an Othello board using Hough transform.

EDUCATION

University of Illinois at Urbana-Champaign **May 2025**

Bachelor of Science in Computer Science GPA: 3.96/4.00

Game Studies and Design Minor

Coursework: Data Structures, Algorithms, Interactive Computer Graphics, Cloud Networking, Operating Systems Design

Activities: Outreach Exec at ACM Game Builders, IGDA Member, ACM SIGGRAPH Member