

# Nicholas Brough

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## GAME DEVELOPER PROFILE

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C++ Developer and Simulation enthusiast with a strong focus on rigid-body physics and vehicle dynamics. Experienced in Unreal Engine 5, combining custom C++ implementation with Blueprint logic. Background in engineering and mathematics allows for the creation of realistic, performance-critical simulation systems. Passionate about gameplay systems, physics programming, and tool development.

## TECHNICAL SKILLS

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**Game Development:** Unreal Engine 5 (C++ & Blueprints), Physics Simulation, Blender, OpenGL (Basic)  
**Languages:** C++, Python, JavaScript  
**Math:** Linear Algebra, Quaternions, 3D Vector Math, Rigid Body Dynamics  
**Tools:** Git/GitHub, Visual Studio, Linux (Debian)

## GAME DEVELOPMENT PROJECTS

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### High-Fidelity Motocross Simulator (Unreal Engine 5)

- Developing a realistic off-road motorcycle simulation with Unreal Engine 5 and C++.
- Implemented custom physics logic for tire dynamics, suspension, constraint solving, and rider IK.
- Optimized vehicle tick rates and sub-stepping to ensure deterministic physics behavior.

### Robotic Motion Control System (Python)

*Featured in Douglas College Article*

- Built a custom 2-axis CNC machine, writing the motion planning software from scratch.
- Programmed algorithms to convert bitmap data into stepper motor steps.

## EDUCATION

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### Douglas College

New Westminster, BC

Associate of Science - Specialization in Computing Science

2025

*Key Coursework: Game Development I & II (Unreal Engine), Data Structures & Algorithms, Computer Architecture*

### University of British Columbia (Okanagan)

Kelowna, BC

Coursework in Applied Science - Electrical Engineering

2019 - 2022

*Relevant Coursework: Engineering Physics, Calculus, Linear Algebra, C++ Programming*

## PROFESSIONAL EXPERIENCE

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### Web Developer & Site Administrator

May 2024 - Dec 2025

*Spruce Point Homes Ltd (Remote)*

- Managed full-stack web infrastructure and implemented automation to improve workflow.
- Handled asset management and data organization for company-wide systems.

### Electronic Assembler

Oct 2022 - July 2023

*Nordic Technology Ltd (Kelowna, BC)*

- Assembled and performed functional testing and defect isolation on hardware components.
- Developed a keen eye for detail and debugging through quality control processes.