

# Nguyen Thai Phi Hung

## Hobbyist Game Engine Programmer



ncoderft3t@outlook.com

[linkedin.com/in/ncoderft3t/](https://www.linkedin.com/in/ncoderft3t/)

Hanoi, Vietnam

### SUMMARY

Innovative and passionate game engine programmer with a strong foundation in computer science, game engine and modern realtime rendering techniques.

### WORK EXPERIENCE

#### Vector Studio

August 2023 - August 2024 Remote  
Developed 2D voxel plugin -

resource streaming  
resource compression (JPEG-LS)  
an optimized voxel renderer  
voxel collider combining

Analyzed and documented some rendering, simulation techniques:

- Shallow Water Simulation.
- Render Graphs in Unreal Engine 5, Unity, Activision In-house Engine.

Implemented Spherical Harmonic Lighting.

### SKILLS & KNOWLEDGE

#### Programming Languages

C, C++, C#, Python, Javascript, HTML, CSS ...

#### Game Engines

Unreal Engine, Unity, Godot, ...

#### Math

Linear Algebra, Quaternions, Calculus, ...

#### Computer Graphics

DirectX 11, DirectX 12, Metal  
GPU Driven Rendering  
Virtual Geometry  
Multithreaded Rendering  
PBR Lighting, Precomputed Radiance Transfer, ...

#### Low Level Programming

Memory Management  
Parallelism & Concurrency  
CPU, GPU, Memory Fundamentals

#### Advanced Animation

Distance Matching

#### Cross-Platform Programming

Windows, Macos, Linux, Android

### EDUCATION

#### Nguyen Hue High School for the Gifted

2020 - 2023 Hanoi, Vietnam

### PROJECTS

#### NRE

NCoder's Render Engine

##### Features:

- A simple render pipeline with DirectX 11, Cascaded Shadows, PBR,...
- An advanced render pipeline with DirectX 12, Render Graphs, Virtual Geometry

#### NRHI

NCoder's Render Hardware Interface

##### Features:

- DirectX 11, DirectX 12 Supports
- Flexible, Optimized Multiple APIs Abstraction  
(static linking for single API + virtual table for multiple APIs)

#### NTS

NCoder's Task System

##### Features:

- Fiber-based tasks
- JS-like Async-Await syntax

#### NMath

NCoder's Math Library

##### Features:

- Vectors, Matrices, Quaternion
- X86 SIMD

#### NSurface

NCoder's Surface Library (for creating windows)

##### Features:

- Win API Supports

#### NCPP

NCoder's Base C++ Library

##### Features:

- Customized Memory Management
- Tagged Heaps, ...
- Customized Logging System
- Macro Tricks
- Macro-based Reflection System

### SELF - RESEARCH

#### Order-Independent Transparency for Virtual Geometry

(Private)

This research aims to find out a high performance order-independent transparency solution that works efficiently with GPU-Driven Rendering techniques such as Virtual Geometry.

