GEORGE ERFESOGLOU

Director of Software | Unity/Unreal SDKs | Connected Devices (BLE/Serial) | C#/C++
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PROFESSIONAL SUMMARY

Hands on platform and engine integration engineer building developer facing SDKs and plugins for real-time 3D applications. Specialize in Unity and Unreal native, cross-platform transports, and reliability focused device messaging.

SELECTED HIGHLIGHTS

- Owned end-to-end Unity and Unreal Engine integrations for a BLE controlled hardware device, from transport layers and SDK APIs to release ready builds.
- Shipped a cross-platform Unreal Engine plugin across Win64, macOS, Android, and iOS, including native BLE backends and packaging/build wiring.
- Architected a unified cross-platform SDK with shared transport and lifecycle semantics, exposed through both Unity (C#) and Unreal Engine (C++) bindings with platform-specific backends behind compile-time guards.
- Built a Windows-native serial transport DLL in C++ and integrated it into Unity via P/Invoke to improve IL2CPP/.NET Standard compatibility and reduce maintenance.
- Built the scent-enabled VR demo that won AWE 2022 (Auggie Awards) Best in Show VR.

TECHNICAL SKILLS

Engines: Unity (C#), Unreal Engine (UE4/UE5, C++/Blueprint), Slate/Editor tooling, UBT/Build.cs packaging
Languages: C#, C++, Java, .NET; working knowledge: JavaScript, Swift/Objective-C
Platforms: Windows, Android, iOS, macOS, Linux (Raspberry Pi)
Interop/Native: P/Invoke, C ABI design, Win32 serial (overlapped I/O), WinRT, CoreBluetooth, JNI
Networking/Protocols: BLE GATT, serial protocols, WebSockets, UDP logging/telemetry
Tools: Git, Perforce, Visual Studio, Rider, Xcode, Android tooling, build automation

EXPERIENCE

OVR | Houston, TX / Remote | Jan 2021 - Present
Director of Software

- Sole software owner for Omara device integrations: partnered with hardware, firmware and product stakeholders to define command protocols and troubleshoot end-to-end issues.
- Built and shipped Unity (C#/.NET) and Unreal Engine (UE4/UE5, C++) SDKs/plugins enabling real-time scent triggering and device control, optimized for predictable runtime behavior and developer ergonomics.
- Implemented a unified transport layer with platform specific backends (Windows WinRT/C++, Android JNI + Java GATT, iOS/macOS CoreBluetooth) plus Serial/BLE fallback behind shared APIs and compile-time guards.
- Engineered lifecycle reliability: discovery/scan, permission gating, connect/disconnect, reconnect handling, single-device arbitration, and game-thread/main-thread dispatch for callback safety; hardened teardown paths to prevent null-state crashes.
- Validated releases via hardware-in-the-loop testing across Windows/Android/iOS and community beta feedback, used request/response tracing and diagnostics to reproduce and resolve firmware/platform edge cases.
- Delivered show-floor demos (AWE 2022, CES 2023, PAX 2026), including a scent-enabled VR meditation app and companion client streaming live session state over WebSockets.
- Co-developed and shipped Aroma Affect and Minecraft/Fabric integrations mapping gameplay events to device output and visualization.

National Oilwell Varco (NOV) | Houston, TX | 2018 - Jan 2021
Software Developer (Unreal / Unity)

- Developed a simulation library of 10+ NOV equipment and components using Unreal Engine 4 to validate industrial control logic before on equipment testing.
- Reduced commissioning risk and avoided costly rework by enabling pre-commissioning validation in simulation (multi-million cost avoidance).
- Built a Unity-based mobile application supporting OTC use cases and simulator driven training/education workflows.

FuelTECH / FuelFX | Houston, TX | 2016 - 2017
Software Developer

- Built AR/VR desktop and mobile applications using Unity, Unreal Engine 4, and Xamarin; shipped production apps to Google Play and the Apple App Store.
- Delivered applications spanning education, training, and simulation with end-to-end implementation from UI to device/application logic.

Bezier Games, Inc. (Ted Alspach) | Houston, TX | 2015 - 2016
Contract Software Developer

- Ported One Night Ultimate Werewolf companion app from Android to PC/Mac/Web in Unity (C#/.NET); built UI, settings, and timed narration sequences.

SELECTED TECHNICAL WORK

Unreal Engine cross-platform device plugin (C++ / BLE / Serial)

- Architected native BLE integrations per platform (WinRT/C++, Android JNI + Java GATT, iOS/macOS native bridges) behind a unified Unreal C++ interface.
- Implemented robust real-time messaging with background I/O workers, heartbeats, and thread-safe dispatch using Unreal Task Graph patterns to avoid blocking gameplay.
- Built editor and packaging integration: Slate BLE device browser, quick-connect actions, Details panel customizations, and cross-platform build wiring in Build.cs (DLL/dylib/framework handling, Android/iOS).

Windows native serial transport for Unity (C++ / P/Invoke)

- Built a Win32 overlapped I/O DLL (CreateFileW, ReadFile/WriteFile) with a stable C ABI (opaque handles, caller-owned buffers, explicit timeouts, last-error retrieval); static-linked CRT (/MT) to remove VC++ redistributable dependency.
- Implemented safe close/cancel semantics for in-flight I/O (CancelIoEx + bounded waits) to avoid rare shutdown hangs; added robust native loading checks and Windows only PluginImporter gating.

Cross-platform Unity device SDK (C# / BLE / messaging / tooling)

- Built a reliable device messaging pipeline: framing/parsing, response correlation, timeouts/retries, and ready-state backpressure to prevent command loss and handle transient disconnects.
- Delivered authoring/debug tools: reusable odor-volume components with falloff curves, data-driven scent definitions (ScriptableObjects), and custom Odor Assets.

Minecraft / Fabric mod + WebSocket bridge

- Built a Fabric 1.20.4 mod bridging gameplay to an external scent/visualization client over WebSockets; designed orchestration (priority tiers, cooldowns, normalization) and gameplay UX (HUD/title effects + shader-driven controls).

SELECTED PROJECTS & CONTRIBUTIONS

- Physical Boids (Fab / Unreal Marketplace): Published a physics-based flocking AI plugin for Unreal Engine.
- Unreal Engine contribution: Credited in Unreal Engine 4.21 release notes for upstream fixes.
- Get In It Games (GIIG): Built UE5 interactive experiences for a cust
- om floor grid system, including game modes and scoring for large-format installations.
- HonorGG (side project): Built a Linux (Raspberry Pi) input capture pipeline and migrated compute backend from a Windows D3D11 path to CUDA kernels to enable portable GPU analysis.

EDUCATION

University of Houston Downtown - B.S. Computer Science, Dec 2015 - Cum Laude