

**Overview:**

I have made my living programming computers for 22 years. During college I worked part-time at a civil engineering company, giving me a good basis for things like mapping and presenting data. After graduation, I worked in the computer game development industry through the 90's and left the industry in 2006. I switched gears to the automotive industry, and am now part owner of an automotive/power-sports tuning company based in Fairbury. Most programming projects that I am involved with take man-years of programmer time.

**Sound/Physics Related Experience:**

While developing computer games, my primary role was the 3D engine programmer (using C/C++/Assembly Language) on various platforms, like PC/Windows/PS2/Xbox/Xbox360. 3D game engine programming is one of the most difficult tasks in game programming, it requires a solid understanding of math, linear algebra, calculus, physics, and computer hardware. 3D games use both Graphics and Sound to immerse the player. The sound is actually very complex. We had to mix potentially hundreds of sounds together in real-time, including emulating the 3D position on 2D stereo speakers, with distance attenuation, geometry obstruction (doors/hallways), room-based effects like reverb, and Doppler effects for moving sound sources. Imagine a scene with bullets and missiles whizzing by, glass breaking, enemies screaming, explosions going off, and bullet casings rattling to the floor. All while also playing background music and non-directional HUD voices and effects. We started a small company in 1993 and when I left in 2006 we had over 200 employees working on multi-million dollar projects. I worked on about 8 games, all of which were successful, top-rated games, sold in major retailers around the world.

In my current business, we produce devices that re-flash automotive and power-sports ECM's with performance tunes. I do the programming for the firmware on the devices, which involves reading and implementing a lot of ISO and SAE specifications for the various protocols and implementing them in code.